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AUTHOR	Poorman, Margaret J.; Fleckenstein, Randall C.
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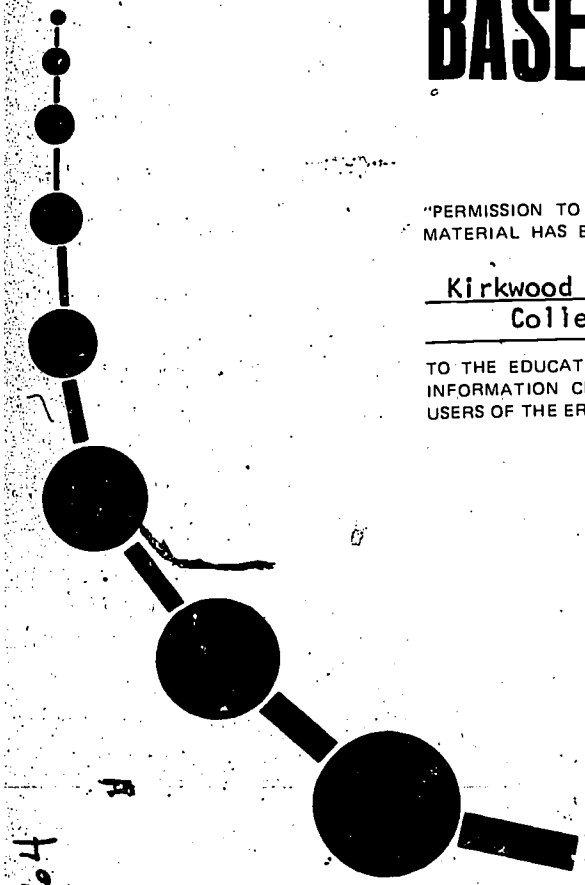
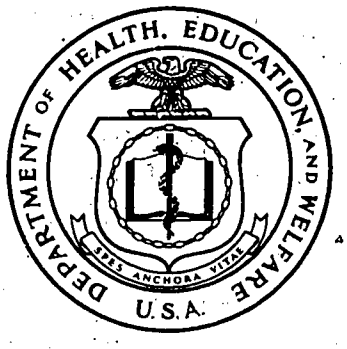
ABSTRACT

Kirkwood Community College, with an enrollment of 4,200 full-time students, received Fund for the Improvement of Post Secondary Education (FIPSE) funds to address the problems of (1) the lock step nature of most of its occupational programs, (2) an attrition rate of approximately 15%, (3) once-a-year placement of graduates, (4) employer and graduates' dissatisfaction with the human relations and problem solving skills of former students, and (5) insufficient use of the expertise of the business and industrial community in the design and evaluation of occupational programs. A program was created to develop a competency-based curriculum in six vocational-technical programs and to establish a developmental math and reading program. The three-year project alleviated and in most cases solved four of the five problems addressed. The only problem seemingly not affected was the attrition rate of students. The instructional and developmental programs were found enjoyable and beneficial by students; placement and employer satisfaction with graduates was higher; and business and industry became more involved in the educational process. An appendix includes evaluation modules, survey instruments and results, and lists of materials. (MB)

DEVELOPING COMPETENCY — BASED VOCATIONAL PROGRAMS





FUND TO IMPROVE POST SECONDARY EDUCATION

Project No. 925DH70076
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FINAL REPORT

Identification of Competencies and Implementation of Pilot Programs to Realize Goals in Vocational Education 1975 - 1978

Margaret J. Poorman, FIPSE Project Director
Randall C. Fleckenstein, FIPSE Instructional Designer

Kirkwood Community College
6301 Kirkwood Boulevard S.W.
P.O. Box 2068
Cedar Rapids, Iowa 52406

30 June 1978

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ABSTRACT

Kirkwood Comunity College, with an enrollment of 4,200 full-time students, received FIPSE funds to address the problems of 1) the lock step nature of most of its occupational programs, 2) an attrition rate of approximately 15 percent, 3) once-a-year placement of graduates, 4) employer and graduates' dissatisfaction with the human relations and problem solving skills of our former students, and 5) insufficient utilization of the expertise of the business and industrial community in the design and evaluation of our occupational programs.

A program was developed with two major components that provided means to address the problems: 1) the development of a competency-based curriculum in six vocational-technical career programs and 2) the establishment of a developmental math and reading program to complement the competency-based curriculum.

The three-year project alleviated and in most cases solved four of the five problems addressed. The only problem seemingly not affected by the project was the attrition rate of students. The instructional and developmental programs were found enjoyable and beneficial by students; placement and employer satisfaction with graduates was higher; business and industry became much more involved in the educational process by helping identify job tasks and the role of advisory committees was increased.

A number of side effects occurred as a result of the project including: 1) the establishment of a competency-based education (CBE) conversion plan for the vocational-technical division, 2) the creation of the Instructional Development Center, 3) increased interest in CBE in the Arts and Sciences and Community Education divisions, and 4) the establishment of Kirkwood as a leader in developmental programs in the state.

The project has implications for those interested in curriculum development, instructional development, vocational-technical education and organizational change.

INTRODUCTION

Kirkwood Community College's three year (1975-1978) grant project, Identification of Competencies and Implementation of Pilot Programs to Realize Goals in Vocational Education, supported by the Fund for the Improvement of Postsecondary Education, FIPSE, had two major components: 1) to develop competency-based curriculum in six designated vocational-technical programs and 2) to develop a developmental math and reading program to complement the competency-based curriculum in our open door institution.

It has been noted that present day education can be improved more by the systematic selection of what is taught rather than improving how it is taught. Content is such a vital element of any instructional program that emphasis upon curriculum is crucial. The primary focus of Kirkwood Community College's FIPSE project was to systematically identify and develop competency-based curriculum for designated occupational programs. The project was concerned with what content or competencies are taught in an occupational program.

There is often times confusion about various educational terms. Competency-based education (CBE) is no exception as there are varying definitions and interpretations of CBE. The following is the definition including characteristics and components of competency-based education established at Kirkwood:

Competency Based Education is an approach (not an instructional

strategy) which focuses on student achievement of significant tasks necessary to assure successful skills for coping and achieving in the present and future society. Primary emphasis is placed upon the outcomes rather than time; on the exit requirements of an instructional program rather than the entrance requirements; and on the communication of specified learning outcomes to the students prior to learning.

Characteristics of Competency-Based Education

1. Instructional strategies are available which permit students to develop the necessary knowledge, attitudes, and skills for successful life roles.

2. Time is allowed to vary among students so achievement of competencies remains constant.

3. Greatest stress is placed on exit requirements, not on entrance requirements.

4. Students are informed prior to the instruction of the competencies that they are expected to perform, together with the level of performance and the conditions under which they are expected to perform them.

5. Responsibility for demonstrating competencies is with the student.

Components of Competency-Based Education

1. Explicit statements of the competencies learners are to acquire are identified and agreed upon.

2. There exist procedures for assessing the achievement of the competencies.

3. Learning experiences are specifically designed for the attainment of the competencies.

This final report of Kirkwood's three year FIPSE grant project

is intended for use by individuals involved in curriculum development, Competency-based education, and/or developmental programs.

The project was known as and referred to (as it is in this report) as our "FIPSE project". Throughout the three years many dedicated individuals contributed to the project. We would like to thank them because it was their efforts which contributed to the success of the project. And special thanks to Larry F. Willis, Director of Career Education, for his guidance.

Project Location

The major scope of the project encompassed vocational-technical programs at Kirkwood Community College. Kirkwood, located in Cedar Rapids, Iowa, is a publicly-supported, comprehensive community college serving the Iowa counties of Benton, Linn, Jones, Iowa, Johnson, Cedar and Washington, as well as portions of adjacent counties which are part of the merged Area Ten. The total land area of the seven counties served is 4,408 square miles or 7.8% of Iowa. The population of Cedar Rapids, which is the second largest city in Iowa, is approximately 115,000; the population of Area Ten's service area is 330,000; and Kirkwood's enrollment is 4,200 fulltime students and 40,000 community education students.

Kirkwood was founded in July, 1966, as one of 15 public comprehensive two-year post-secondary institutions in Iowa. Community Colleges in Iowa are charged by law with the responsibilities of identifying the educational needs and desires of adult citizens and of designing educational programs which will help these citizens fulfill their goals.

As an open door institution, Kirkwood attracts a student body quite diverse in characteristics. For example, thirty-five percent of our students report family incomes under $7,500 and 25% are older than 34. A non-traditional student body demands non-traditional programming and Kirkwood, in its 12 years of operations since its conception in 1966, has sought to meet the individualized needs of its students through the provision of a multiplicity of learning opportunities.

Kirkwood is recognized in the state and nation as having accomplished a host of academic and administrative innovations. Accomplishments include full accreditation by the North Central Association in only three and one-half years, the largest adult education program in the state and the second largest vocational-technical program. The college is currently the prime sponsor of USOE, Title III, Developing Institutions consortium which provides technical assistance to 120 two-year colleges nationally in order that these colleges may better meet the goals and objectives upon which they were established and by which they operate.

Through innovations such as the ones discussed above, Kirkwood has demonstrated the effort required to make institutional goals truly operational for a student body quite diverse in characteristics. It was in this spirit that the FIPSE project was a reflection of Kirkwood's commitment to the maximization of student success in education.

Problems Addressed

The two major grant components 1) to develop competency-based curriculum in six designated vocational-technical programs and 2) to develop a developmental math and reading program to complement the competency-based curriculum in our open door institution, resulted from five general areas of concern the college wanted to address with regard to its occupational preparatory programs in the vocational-technical division. These were: 1) the lock step nature of most of our programs, 2) an attrition rate of approximately 15 percent, 3) the placement of students in the work force from a given program only once each year, 4) employer and graduates' dissatisfaction with the human relations and problem solving skills of our former students, and 5) insufficient utilization of the expertise of the business and industrial community in the design and evaluation of our occupational programs.

1. Lock Step Nature of Our Programs: Typically students would enroll in most of our programs only once each year. They would begin and end each quarter at the same time regardless of varying skill or learning rates. While we recognized that students vary widely in the work-related skills which they possess at the beginning of their program and in the speed which they acquire the skills needed to be successful employees, our educational programs would not adequately allow us to deal with this diversity.

2. Attrition Rate: Our studies indicated that in excess of 15% of those students enrolling in our programs did not complete them and that a majority of the non-completers had basic deficiencies in reading and mathematics skills. Thus concurrent with the need

to develop competency-based programs, would be the need to determine student's previous preparation or readiness for entry into programs through pre-entry evaluation and the need to provide developmental training in reading and mathematics skills necessary to succeed in the occupational training program. For the developmental program to be successful, the materials would need to be highly motivational--at a level commensurate with the beginning skills of students and compatible with the competency-based training program.

3. Placement of Students: Due to the lock step nature of our programs students completing programs at Kirkwood typically would do so once each year. Consequently the placement of our graduates would not always coincide with the manpower needs of business and industry which demands a continuous supply of trained manpower throughout the year. Even though our placement of students in jobs for which they are prepared exceeded 90%, we were not able to provide employers with the continuous supply of manpower which they need.

4. Employer-Graduate Concerns: Employers and graduates had expressed concern with regard to the adequacy of portions of our preparation programs, particularly problem solving and human relations skills. Our follow-up studies indicated that the most frequent cause of failure or limited effectiveness on the job was ineffective human relations skills of many of our graduates. While technically competent in most areas, the application of these skills to new situations seemed to be a problem for some former Kirkwood students. Therefore thorough consideration of human relations and problem solving skills as basic competencies to be developed through our educational programs would be an essential step in improving the

preparation of students for work.

5. Utilization of the Expertise of the Business and Industrial Community: To develop and maintain a curriculum highly reflective of the needs of business and industry we would need to strengthen our relationship with these sectors in preparing people for work. We have and continue to utilize advisory committees for each occupational program offered at Kirkwood. Yet too often our relationship with these committees was casual and limited in effectiveness. More effort would be given to providing advisory committees with better understanding of the educational process in order to maximize their input into curriculum development and program evaluation. The contributions of the advisory committees would be essential to the identification of the work-related competencies needed for successful employment.

Program Selection

The first step in the project was the selection of the six programs to be involved in the CBE curriculum conversion. One program from each of the six career clusters in the vocational-technical division was selected on the recommendation of the department head in each cluster. The six programs specified to develop competency-based curriculum were to serve as models for the other programs.

Various factors were influential in the choice of the programs. Some programs were chosen because of their desire for continued improvement while others were selected because of the perceived need for further analysis.

Ultimately the six programs were divided into two groups, A and B, with the only difference being the starting date--Group B began one year later.

The selected programs included:

	Group A
1975-1978	Auto Collision Repair Environmental Health Medical Assistant
	Group B
1976-1978	Ag Mechanics Data Processing Office Education

Project Staffing

Since this was a complex curriculum change process, an innovative staffing pattern was utilized throughout the project. When faculty are teaching a full load, they do not have an adequate amount of time to devote to extensive curriculum development. Thus, in order to capitalize on the faculty's content expertise, two faculty members in each program volunteered or were selected for 50% release time to work on the grant as the subject matter experts.

In addition to the six vocational-technical faculty on release time, the other members of the project staff consisted initially of a project director/task analyst, an instructional developer, two developmental education specialists, an audio-visual technican, a project secretary, staff secretary, and 15 man-days for consultants. They formed the body of the staff during the three years with some modifications years two and three.

The subject matter expert (faculty member) and the instructional developer (the project director also did instructional development) worked as a team. While faculty are current in their content areas, they are not always familiar with or understand the curriculum/instructional development process. It was the responsibility of the instructional developer to provide direction in the instructional/curriculum development process as well as coordinate the multifaceted activities involved in the project. The instructional developer also assisted in providing in-service to faculty on CBE and other related areas.

The faculty member was responsible for the content of the developed materials and worked with the instructional developer in designing the instructional materials. While the nucleus of the design

staff was the faculty member and the instructional developer, at different stages of the project other key personnel became actively involved with the team. These included library-resource specialists, ed media technicians, and evaluation specialists.

By the end of the project, faculty/subject matter experts had real ownership of the materials developed. This ownership of the product has provided more stability for its implementation and utilization. Also, the faculty members now fully understand the instructional design process and can continue to evaluate and refine instructional material on their own. At the same time, these faculty members have become change agents to assist their colleagues in instructional/curriculum development.

The developmental component of the project approached the staffing in a somewhat different manner. As there were no developmental math and reading specialists at Kirkwood when the project began, two specialists were hired for both their content and process abilities. Thus the core of the developmental design team consisted primarily of the developmental education specialists who were both content as well as process experts. At the end of the project, they (as the voc-tech instructors) became full time faculty utilitizing the material they had developed.

It is critical to the success of a change project to identify individuals who are current in their content area, well respected by their peers, and not afraid of trying something new and different. They then become an in-house resource who will facilitate change by impacting their programs and their peer group. And even though the grant project has ended, this resource will continue to effect instructional change.

Description of Evaluation Methodology

Scope of Evaluation

The evaluation plan for the three year project covered both the six instructional programs involved and developmental math and reading programs.

A number of factors were examined on a yearly basis to determine the effects of the curricula on students, faculty, and administration. Both internal (project staff, students, faculty involved, department heads) evaluation and external (State Department of Public Instruction team) evaluation were utilized to monitor the project's progress. The evaluation plan consisted of the following components:

1. Instructional Program
   a. The effectiveness of the process and procedures in terms of implementing and conducting the curricula.
   b. The study of the competency-based curriculum developed through the grant and student and instructor impressions of it.
   c. Effects of competency-based curriculum and developmental programs upon student enrollment, retention and placement and upon employer and student satisfaction in the work place.
2. Developmental Program
   a. A pre-post test evaluation of student achievement.
   b. A post student attitude using the Osgood methodology.
   c. The yearly percentages of students enrolled in developmental reading and math from vocational technical programs.

Time Frame of Evaluation

Evaluation was done throughout the three year duration of the project.

Students, advisory committees, the previous year's graduates and their employers were evaluated at the end of each program's year. Individual courses and videotapes utilized in the competency-based curricula were evaluated on a quarterly basis.

Analysis of the placement and retention of students was conducted yearly as were the external evaluation by the State Department of Public Instruction team. Students in the developmental areas were evaluated quarterly.

A time line indicating the various evaluation methodologies conducted and at what points in the project they were performed can be found in Appendix A.

In- Service

An important aspect of the FIPSE project was an active in-service program in both the curriculum and developmental programs. In order to initiate and maintain the change processes in-service programs were developed and conducted by the project staff during all three years of the project.

The initial programs were primarily in-service for project staff while years two and three were oriented to the rest of the college.

We found that the in-service efforts (though time consuming) were an effective means to provide relevant and accurate information that may not have been communicated as well in other ways to the diverse college personnel. Sessions were provided for departments, programs, and faculty college-wide utilizing a variety of strategies.

Below are some of the typical areas presented for the curriculum development component at various times throughout the three years.

* Developing Competency-Based Education
* Process and Procedures for Competency Identification
* Competency Needs Assessment Instruments
* Modularized Instruction
* Individualized Instruction
* Competency Record Form
* Curriculum/Instructional Development
* Instructional Strategies
* Criterion Referenced Evaluation
* Simulation and Gaming

Developmental component sessions were as follows:

A. Orientation to Personal Achievement Services and determining readability levels of textbooks.

B. Teaching Content Related Vocabulary.

C. Comprehension Skills - "Efficient Reading and Study Skills".

D. Two ten-hour courses were offered for the participants as a follow-up to the "Efficient Reading" workshop. The courses were

designed to help instructors practice the skills taught in the workshop and incorporate those skills in their own reading and teaching.

E. Workshop on the Vocational Reading Power Project of Pontiac, Michigan.

F. In addition to in-service sessions, numerous hours have been spent working with individual instructors on textbook readability and selection and direct application of workshop ideas.

G. At Kirkwood's in-service day, two sectional presentations were made to acquaint staff members with Personal Achievement Reading and to answer questions they had about it. A videotape was used that had been developed by learning center staff, showing reading students doing various reading activities.

H. Orientation to PAD for new staff and all other interested people including discussion of readability, college level reading skills, math, writing and study skills, tutor assistance and counseling services. Some attention was given also to the psychological implications of the poor reader entering post-secondary education.

I. A training session was presented entitled "Word Power in Agriculture" to secretaries in agribusiness. General vocabulary as well as technical vocabulary was discussed.

J. The outlying Kirkwood learning center staffs were provided orientation to FIPSE materials, which were distributed and explained.

K. Four speed reading sessions were offered for instructors for them to increase their own reading speed and accuracy.

L. A six-session workshop "Reading Strategies for the Sensuous Instructors" was offered. Instructors learned about general vocabulary, technical vocabulary, readability, previewing textbooks, text selection, and guided reading practices.

CBE CURRICULUM DEVELOPMENT PROJECT OBJECTIVES

The curriculum development grant objectives in the initial proposal which directly addressed the five major problems already explained will be discussed in this section. The discussion will include the activities and outcomes relative to the objective, an assessment of the objective, followed by our recommendation for others based on our experiences.

It should be pointed out that each department or career cluster area involved in the project managed to knead project objectives/goals into shapes that they felt more comfortable with and were reflective of their own biases.

It is also worth mentioning that those career areas that did choose to deviate from project goals (and their deviation was only done when goals are looked at in a strict sense---the competency basing of their curriculum still provided a guiding star) did, in at least one case, formulate a broader development plan of longer duration than that encompassed in the original FIPSE proposal. Thus, though their achievements at the end of the project are not spectacular, the groundwork layed for future development portends a much grander curriculum effort in the immediate future.

Objective I

To identify job/task and human relationship competencies for successful entry into and advancement within selected career fields. Specifically, competency identification will occur within one program in each of the six career clusters at Kirkwood (business, data processing, trades and industry, health occupations, agriculture and environmental occupation education) with that program then serving as a model for affecting curriculum change within other programs of the career cluster.

A. Activities and Outcomes

As already noted in the sections on program selection and project staffings, each of the six career clusters selected one program in its career cluster for the competency-based education curriculum conversion process with that FIPSE sponsored program serving as a model for the other programs.

The project team consisting of the faculty member/s on release time and the instructional developer followed an internally developed model for the competency identification. See Appendix B for the working model. This portion of the project required approximately six months at the onset for each program and involved researching and locating already existing information, writing and/or developing competencies with the assistance of instructional staff, advisory committees, and students and finally validating and sequencing the objectives.

Each of the six programs validated the competencies relating to occupational program utilizing a survey which was conducted in our Iowa region where over 90% of our graduates exit and are employed after completing their training.

The competencies were verified by both employers and employees currently employed in the field as to the importance of the competency for job success and the frequency which the competency is needed on the job.

B. Assessment

While this activity seemed to be a rough and complex beginning point for faculty who were not familiar with curriculum development and competency-based education, though this frustration was alleviated by the assistance of the instructional developer, the resulting information (validated competencies) was the foundation for the remainder of the curriculum conversion. The initial research, actively involving advisory committee members, an in-service program for faculty on CBE, resulted in a very intense and motivating (and frustrating at times, too) beginning effort which remained the atmosphere for the balance of the project.

The initial problem/project identification of the individual programs was extremely crucial--since if a problem would have been diagnosed incorrectly, the remainder of the work would have not solved the problem. Our initial problem/project identification and formulation were basically right on target.

C. Recommendations

The initial start up research and orientation/in-service time devoted to a project are often slighted when people jump into a project without adequate problem/project identification and planning. An incorrect analysis because of inadequate project research and definition at the onset of a project will cost much more time and effort in the long run. The project also needs a clear, concise orientation

program involving key participants from decision makers to project workers which establishes an interactive communication network for the duration of the project.

A working model/plan needs to be developed, communicated, and followed. When conducting competency surveys, do not write competencies that are too specific--it results in hundreds of competencies to be validated. Work with computer personnel to compute results of survey; op scanning is a good method. Utilize advisory committees for competency statements and assistance in survey distribution to key people/industries in the community.

When final data is returned, be sure to develop a plan to utilize results obtained that is both meaningful and workable.

Objective II

To convert the existing curriculum of the six identified programs to a competency based format. A total of twenty-five credit hours of instruction will be converted in each of the six programs.

A. Activities and Outcomes

Upon identifying and sequencing of the most important and frequantly used competencies, the curriculum conversion work was begun. Following the philosophy and direction of the CBE definition established at Kirkwood (see report introduction), the competencies were grouped into appropriate instructional areas. It was necessary then to determine how students would develop the necessary specified knowledge, attitude, or skill of the selected competency/outcome. A media approach was selected in conjunction with supporting alternative learning activities such that each student would progress in a style and at a rate which was appropriate to him/her.

Characteristics of the occupation were considered as were the strengths and resources of the institution.

In order to accomodate variable entry/exit and advanced placement, the competencies were developed into modules of instruction which grouped families of competencies into units. The modules in all programs followed a similar format which can be found in Appendix C. In addition to the print oriented instruction, most programs developed other supporting or alternative mediated instruction. Depending on the competency being taught, the media ranged from audio tapes, simulations to mock-ups or videotapes.

The development of both the print and mediated instruction involved both the content specialist/instructor and the instructional designer. Kirkwood has a professional and very talented educational media department which greatly assisted the team in developing numerous color videotapes either in the studio or on location (one department did over 70 videotapes). Videotape-assisted instruction was widely utilized in most of the FIPSE programs as the concept of variable entry/exit goes very well with it. Kirkwood has closed circuit, cable TV throughout campus so the medium was widely utilized.

Listed on the following page are the various departments and the instructional materials developed at Kirkwood under FIPSE. Purchased materials are not included.

Group A Programs (1975-1978)	#Videotapes	#Modules
1. Auto Collision Repair	70	31
2. Environmental Health	7	11
3. Medical Assistant	49	47
Group B Programs (1976-1978)	**#Videotapes**	**#Modules**
4. Agricultural Mechanics	9	15
5. Data Processing	3	8
6. Office Education	71	19

The order forms listing the modules and videotapes of the materials being disseminated can be found in Appendix D. Appendix E lists all the other videotapes developed under FIPSE at Kirkwood.

In addition to the print and media development/production, criterion-referenced evaluation instruments were developed to assess the student's mastery of the competency. These are included in the print modules.

All six programs converted approximately 25 credit hours of instruction to competency based education. In fact, four of the six (Environmental Health, Office Education, Medical Assistant, and Auto Collision) converted almost their entire programs and performed a pilot year of testing.

Agricultural Mechanics, though not totally completing the conversion process in two years time, is continuing to develop and has impacted the entire Agribusiness and Natural Resources Department at Kirkwood (12 programs). The entire department is in the process of converting to CBE.

Data Processing made the least progress in the conversion. Several factors impinged on this situation. This program had the least support from its personnel as well as a major technological upgrade

in the hardware utilized in the program which caused considerable disruption.

On the other hand, Environmental Health did extensive reorganization of the entire program as did the Medical Assistant Program.

Office Education and Auto Collision deserve honorable mention for their outstanding work far above and beyond the project's goals.

B. Assessment

Competency-based education is a matter of degree and, in our experience, quite a malleable concept. One might be able to draw an analogy with judo. At our project's closing date one of our programs wore a green belt in competency-based education while the others wore brown, and a couple received black belts.

This objective was doubly successful--not only did the designated programs develop competency based curricula but the enthusiasm generated during the project in what's normally considered a dull area spilled over to other programs in the vocational-technical division as well as the Arts & Sciences and Community Education divisions. Though it must be noted there wasn't 100% support or enthusiasm for the project in all areas either.

What is the cost effectiveness of CBE? From our experience, it does not have to cost any more than regular instruction--and it may be more cost effective if more students can be accomodated in variable entry/exit classes.

C. Recommendations

A systematic, instructional development model for the curriculum conversion should be followed to provide consistent direction to the development team. The curriculum development terminology needs to be clearly defined and communicated (in our case CBE) to

all involved parties--and both the process and the design plan need to be coordinated in an effective in-service program.

A module format with examples as well as criterion referenced evaluation procedures need to be well understood by the developer. And, if extensive media is planned, it is helpful to have the expertise of talented educational media personnel.

Objective III

To pilot the revised curriculum for a period of one year.

A. Activities and Outcomes

The piloting of the curricula in the six programs required that we ask a number of questions about its operation for revision purposes. These questions included "What are student and faculty attitudes toward the competency-based curriculum?", "What are the effects of a competency-based curriculum and the developmental programs on student enrollment, retention and placement?", "Are students and their employers happy with the results of the education received once they are on the job?", "Does this curriculum generate increased involvement of industry representatives in the form of advisory committees?", "How satisfied with the training received are graduates of a competency-based curriculum when compared with graduates prior to the implementation of such a curriculum?"

Interviews, data from the Admissions and Registrar's Office, and external site visits by the Iowa Department of Public Instruction (Appendix F), all contributed information to answer these questions. A number of survey instruments were also utilized (see Appendix G) including:

* Advisory Committee Questionaire

* Student Course Survey

* Student Attitude Survey

* One-Year Graduate Survey

* Employers of One-Year Graduates Survey

* Five-Year Graduates Survey

* Videotape Evaluation

* SPOT(Student Perception on Teaching)

The developmental programs also evaluated their effectiveness utilizing a pre-post test assessment of student attitudes toward reading or math and a post attitude assessment using the Osgood system.

Major findings of our analysis were:

a. No significant percentages of students were dissatisfied with the competency-based curricula. Generally they felt it was easy to understand their materials, it was organized, and they understood what was required of them. The only area that came out consistently lower than other areas on attitude surveys was program creativity. Since all programs developed a series of modules that were formated similarly this criticism could be expected. Instructors generally felt that they were better organized and more beneficial to more students using competency-based instruction.

b. Student enrollments remained unaffected in all programs by the competency-based curriculum.

c. Retention in the competency-based programs followed the same nosedive winter quarter that all programs at Kirkwood do.

d. Placement was very high in the six competency-based programs (see Figure 1) on the following page.

PLACEMENT OF GRADUATES

Program	75-76 Graduates	75-76 Placed	76-77 Graduates	76-77 Placed
Data Processing	36	30	61	46
Environmental Health	15	9	16	7
Agriculture Mechanics	20	20	19	12
Auto Collision Repair	18	16	23	22
Office Education	62	62	61	61
Medical Assistant	38	38	38	38

Figure 1

e. Graduates and employers both were quite happy with their skills once in the work force.

f. Advisory committees played a somewhat larger role and felt somewhat more involved than previously.

g. There was a noticeable improvement in the worth of the training received by one-year graduates (under competency-based instruction) when compared to five-year graduates as measured by attitude surveys. However, only a small number of surveys were returned by both groups.

B. Assessment

It is apparent that the FIPSE intervention had little effect on student enrollments and retention. The former result may be because community college students do not enroll in a program primarily for its curriculum organization, methods of instruction, etc., but rather for the employment outlook of that occupation. The problem of retention has long been dependent on seasonal changes at Kirkwood.

This stop-out phenomenon* was not halted by the CBE curricula,

* Students who temporarily quit college but return to higher education at a later date.

Apparently, at least in our experience, a more responsive and future-role oriented curriculum has little short term effect on student retention.

Most of our assessment results were attitudinal and thus confined to impressions of the curricula by the various parties. No real comparison was made of student achievements under CBE as compared to the prior program curriculum, nor was a comparison of skills and knowledge taught prior to task analysis made with the skills that resulted from that procedure in each curriculum.

Several faculty did remark that they found that more students utilizing the CBE curriculum were mastering the material at higher levels of achievement than with the traditional curriculum.

C. Recommendations

In order to insure a viable assessment plan a fairly detailed timeline should be devised early in the project and agreements to adhere to it should be sought from all persons assigned to the project. While we did devise a plan for assessment, we did not always receive prompt cooperation in fulfilling its requirements.

Once assessment information is received some sort of process for making decisions and revising the curricula should be developed. A planned session for program review using assessment data for decision making after each assessment period might be a solution. Another helpful solution would be to seek support for revision efforts from the central administration. We were not always adament enough in requesting some light pressure from the administration when it may have done some good.

Objective IV

To develop a competency based testing program within each of the six identified programs which will be utilized in permitting students to "test out" of any number of instructional units within the program.

A. Activities and Outcomes

The competency-based testing program in the six programs consisted mainly of pre-test options for each unit developed. Depending upon pre-test performance, students could skip any number of units and advance to a point in the curriculum that provided them with more of a challenge. For the most part units were developed using this plan. Pretests were based on the performances to be demonstrated by students at the completion of a unit. In application, only Office Education has been able to truly utilize the pretest option to any extent. This was because it was the only program that ever enrolled students with enough prior knowledge to test out. While the other programs did provide the option, the incidence of students with prior knowledge in say, Data Processing or Environmental Health has been small.

B. Assessment

This procedure proved particularly beneficial with the Office Education program. Many of this program's students had training in high school in typing or shorthand and were able to test out of basic skill areas in these subjects. The same situation was true for Agriculture Mechanics where many students live and work on farms. Such students needed and appreciated an option to test out on basic power unit operation skills (tractor, pick-up trucks, etc.) and other basic mechanical areas. On the other hand, Auto Collision Repair

enrolls very few students ever experienced in even the most rudimentary skills of this trade. Even if seldom used, as in Auto Collision Repair, the pretest option provides a powerful image-enhancer and motivator to students having skills in a particular field. Logically, it would seem that the economic incentives--less tuition to pay and earlier entry into the work force--would provide a great deal of motivation to potential students who are hesitant about enrolling because they'd have to study material they already know simply to fulfill credit requirements.

One problem that existed was the erratic policy applied to this procedure. Every department or program had a different way of handling the test-out provision. In some cases a student would advance several units, finish early, and begin the next quarter's material. In other cases a student would test out and go to a more advanced unit in the same subject and thus be bounded by the same time constraints as other students. In still other situations the student was awarded "L" credit (Learning credits--based on the number of units or courses passed) and wasn't required to come to class until the unit he/she was ready for began, or the student continued to work, finished early, and didn't have to come to class until the next quarter.

C. Recommendations

If a school is going to implement a test-out program, it would probably work better if it were somewhat standardized in its operation. Certainly each program should be allowed flexibility based on its physical resources, number of materials and students, types of instructors, etc., but some policy for awarding credit, charging fees for the credit awarded, etc. should be devised. By doing

so, the public, the staff and the students can be made aware of the test-out program and what it means. In retrospect we wonder how many students were not aware of the test-out provision that may have benefited.

A related matter is the increased enrollments that might be generated by publicizing a test out program. We did not publicize it and may not have reached potential students because of this fact.

Another problem that should be dealt with is providing a time period and facility for allowing student test-outs. Because other students are usually using the space and/or equipment needed and the instructor has duties to perform, it makes it difficult to provide test-outs. We suggest setting aside a definite time and place on a schedule (monthly, weekly, etc.) for student test-outs.

Objective V

To utilize the six career cluster advisory committees representing both labor and management from the business and industrial sector, previous graduates of Kirkwood's vocational-technical programs and members of accrediting boards. The career cluster advisory committees will report directly to top level college administration.

A. Activities and Outcomes

Advisory committes were utilized in all six vocational-technical programs to assist in the writing and refining of the competencies; distributing and validating the competencies, and making suggestions regarding the programs' curriculum in light of the information gained from the competency surveys. The Director of Career Education attended all the advisory committee meetings.

B. Assessment

Prior to the FIPSE project, the involvement of representatives from business and industry in vocational programs had been utilized at Kirkwood. As a result of the project, the advisory committee's involvement was maintained and strengthened in all the FIPSE sponsored programs. In all the programs, the committees assisted Kirkwood in the programs' development.

C. Recommendations

Involve and utilize the expertise of advisory committees early in the project as they provide valuable assistance.

DEVELOPMENTAL MATH & READING COMPONENT

When the FIPSE proposal was written, there was considerable concern at Kirkwood about the need for a developmental center. Given the open door policy of the community college, many students enroll who are less than adequately prepared in the basic skills. These students often find themselves unable to perform satisfactorily in either arts and science or vocational classes, and often leave school without completing their program, turning the open door into a revolving door.

It was clear that many students needed better basic skills to stay in school. Those skills were initially defined as reading, writing and mathematics.

To assist in the aquisition of these skills instructional materials were necessary. Upon searching for adult and vocationally related material, it was found that few good materials were available to teach adult basic skills, and even fewer were available that related to the vocational interest areas of adults.

> *"The reading problem in the United States has reached crisis proportions. Statistics indicate that one of every four students has a serious reading deficiency and one of every three job holders has a reading deficiency serious enough to deny them advancement. A similar situation exists in the mathematics and writing competency areas. Specific studies on attrition and*

test results from all Iowa area schools substantiated the need for improving these skill areas. Documentation for the need for adult oriented curriculum materials has been identified . . ." (DPI Dispatch, January 1976)

Objective A

To develop and pilot a multi-level variable entry/exit developmental program.

A. Activities and Outcomes

The Personal Achievement Department provides one-to-one or small group instruction in reading, writing, mathematics and study skills. Since its establishment in 1975, the department has served nearly 1,000 students. The department has a variable entry/exit policy, students may start anytime (as long as there's room), and need not wait until the beginning of a quarter to begin instruction.

Once the assessment process takes place, students and instructors set short and long term goals toward which they work. Upon exit from the center, students' progress is assessed by the use of post tests.

The developed vocational materials are used in conjunction with commercially produced materials to help provide structured, adult-related instruction in the learning center.

MATH: Seven math packets were developed. One packet teaches the concept and application of percentage computation. The other six packets are related to the six vocational areas of agriculture, auto repair, business, data processing, environmental health, and health occupations. They cover the mathematical competencies of numeration, addition, subtraction, multiplication, division,

fractions, decimals, ratio and proportion, percent, problem solving, graphs and charts and measurement. Unlike the reading materials, the math materials do not provide learning strategies. They act as a pool or bank of vocationally related problems and exercises in basic mathematics.

READING: Reading materials were developed to relate to the six vocational areas of agriculture, auto repair, business, data processing, environmental health, and health occupations. For each area a packet or "workbook" of approximately 30 pages was developed to teach the following reading skills:

* Learning Word Parts - roots, prefixes, suffixes, and compound words
* Clues to Word Meaning - using the context
* Finding Exact Meanings - using the dictionary and glossaries
* Mastering Technical Vocabulary - way to remember and use technical vocabulary

Additionally, a packet on Reading a Manual and Following Directions was developed for agriculture, and a packet on Inference was developed for data processing.

Each packet contains from five to ten small objectives involved in the larger skill covered by that packet. Students complete small, step by step tasks to gain competency in the overall reading skills.

Each packet has a pre/post test to assess students' entry skills and improvements, and an answer key.

The development of the reading and math materials took place in the first two years of the FIPSE grant. They strive to teach basic skills to adults through high motivation, clear organization, and relevancy to the adults lives. To our knowledge no other materials exist that are thus vocationally related.

The developmental instructional philosophy is that instructors deal with whole students rather than fragments of students. One cannot just deal with a reading or math problem because students bring whole selves to the academic tasks. The in-house full-time counselor coordinates with instructors to work with students on assessment, orientation, goal setting and decision making.

B. Assessment

It would appear that the developmental component of the FIPSE project was successful from several points of view. There is evidence, especially in math, that the academic instruction provided by the lab did help people be successful and stay at the institution. Help in both math and reading seemed to provide motivation for students to continue their programs.

But it is the feeling of the Center's staff that more than the academic offerings of the lab, the attitude and approach toward the students, and the environment of the learning center helped students stay in their programs. While many learning centers, for the sake of efficiency, are turning more and more to a self-paced, self-taught format (students pick up the day's assignment from a secretary, go find the materials, and work on their own), Kirkwood's center stressed student/teacher interaction on a one-to-one or small group basis. By dealing with the whole student in a personalized manner, the staff provided tremendous psychological support and structure for students who might well have left school without it.

There is no doubt that this individualized delivery system is not efficient. It is expensive and it limits the number of students who can be served. But it provides what this staff feels is a very

significant service that helps students experience successful college careers. Because of the expense it may be advisable to explore the possibility of lab fees to offset the cost of learning center instruction.

C. Recommendations

Support for learning centers must come from all quarters if the centers are to survive. First of all, the faculty must support the concept of developmental education. Their attitude must be that such a service best serves their students.

Such faculty support would imply an on-going in-service program to help faculty deal with basic skills problems in their own classrooms. In-service will also open the channels of communications so that good coordination of effort may take place between general faculty and learning center staff. In-service will also assure that new faculty members are made aware of the service of the center.

Support must come from the registrar's office if flexible entry/exit is to take place. This requires coordination and cooperation on the part of all concerned.

Institutional and state support must also exist in the form of transferable credit granted for certain learning center courses. If the institution does not apply learning center courses to the completion of its programs, students and faculty will doubt the worth and credibility of the center.

A learning center, without unlimited staff, must define the population of students it will serve and determine within reasonable bounds, the type of instruction that is to be provided. Undertaking the role of trying to be everything to everyone will impair the

quality of service offered at the center, and negate any benefits that would have been derived from money, time, and energy spent and the students' own needs. They must not impart to students that the learning center is a place to avoid, but rather that it is a place where students can get additional help.

Support must come from the administration as well as the faculty. Learning center programs are expensive, and must be made a high institutional priority with hard dollar funding if they are to continue offering viable developmental services.

Objective B

To identify the necessary math and reading skill levels for entry into the six vocational technical programs and to develop a testing program to determine the math and reading skill of students requesting admission into one of the six training programs.

A. Activities and Outcomes

The developmental math specialists conducted a survey of all six vocational-technical programs to determine the time at which a student would need one of 38 mathematical operation competencies. See Appendix H for a copy of the survey.

The developmental reading specialists also identified the necessary reading competencies for the six programs. A computerized readability program called GMSTAR which measures the difficulty of printed materials by assessing average sentence length, average number of words per sentence, number of syllables per hundred-word passage was useful in this effort.

Based on the above information, a testing program called Self Assessment and Course Selection for incoming students was utilized

in math, reading and writing. These tests are not entrance exams or requirements but utilized by the student to assist in course selection. The test results are not made available to faculty. See Appendix K for a copy of the student self rating form.

B. Assessment

The developmental center utilizes these diagnostic procedures when students enter to determine their strengths and weaknesses in the academic skills, preferred learning skills, and attitudes toward the use of various basic skills. Extensive record keeping is done to determine academic gains between developmental (Personal Achievement Department) entry and exit. The self assessment testing program is being utilized in almost all departments college-wide.

C. Recommendations

The students' test results are utilized in making recommendations for course selection if help is needed in math, reading, or writing. The student with the assistance of a counselor (results are not shared with instructors) selects an appropriate study plan based on the test information. When the tests are given, it is stressed that they are not utilized for entrance requirements.

Evaluation

Evaluation of the developmental component took place at a variety of levels and at all stages of the project.

Program

The entire developmental component was evaluated yearly by a team from the Iowa Department of Public Instruction. The team looked at yearly goals, procedures, policies, materials, etc. and wrote a summary of their visit, making recommendations and suggestions.

Materials

The packets were continually evaluated by the students who used them. Written questionnaires concerning the packets were completed by students, whose responses were generally very favorable.

In 1977, an independent committee made up of reading teachers and coordinators in Eastern Iowa established criterion for a successful reading packet in each reading skill area our materials covered. They then measured the materials against their criteria, pointed out strengths and weaknesses in the materials and suggested additions and changes. The final three cluster group packets were written on the basis of their comments and the first cluster group packets were refined to meet the established criteria.

Student

The evaluation of the students was done by instructors. Several assessment tools were used. For reading the SRI (Standard Reading Inventory) was administered at entry and exit from the course, as was the reading component of the College Entrance Examination Board Test (CEEB). These tools were used diagnostically at entry to the program and were used to measure gains in general reading ability at the end of the program. Pre/post tests from the developed FIPSE materials were used in a similar manner. Generally students performed better on their post tests than on their pre tests. The degree of improvement seemed dependent upon length of time spent in the center.

Another assessment tool used by the developmental staff was the Osgood attitude survey. The survey assessed attitudes toward five concepts of an academic area: 1) value, 2) emotional reaction to, 3) pleasure, 4) interest in, and 5) difficulty of. See Appendix I for a write-up of the results of the reading surveys for the past

six quarters.

Evaluation of math students was done on a pre/post basis also. The assessment tools used were the computations test of the College Entrance Examination Board and teacher-made tests.

Staff

The evaluation of the center's staff was done both by students and by administration. The students filled out a variety of teacher-made evaluation forms and responded to a computerized battery of questions. The questions not only evaluated the instructors but also the course set-up and structure.

Administrative personnel followed the institution's evaluation procedures for instructors, which included several class visits, pre-class and post-class conferences, establishment and review of goals for the year (MBO), format, and general observation.

EFFECTS OF PROJECT AT KIRKWOOD

Prior to the FIPSE grant, work in curriculum improvement was considered dull and a developmental program to assist students was non-existent. Through the FIPSE activities, enthusiasm for curriculum development was generated which spilled over from the original six programs to the entire vocational-technical division and the and the college's other two divisions (Arts & Sciences and Continuing Education) as well. A vigorous developmental program, the Personal Achievement Department, emerged to assist our students.

The FIPSE sponsored grant activities developed a process, system, and support service which approached the curriculum development in a systematic manner. This resulted in an institutional awareness and concern for curriculum renewal.

Business and industry have impacted our programs by supplying us with information to assist in revising and updating curriculum for today's student.

It has been stated that our greatest resource and often the most neglected is our faculty. We have developed a cadre of change agents within our institution which will continue to impact those around them.

Overall, a more comprehensive instructional, faculty, and organizational development plan has resulted which will provide continued institutional growth and renewal.

The following is a description of some of the major outgrowths of our FIPSE project in improving education at Kirkwood.

Goal of Converting Kirkwood Training Programs to Competency Based Education by 1982

Due to the success of our FIPSE project and Kirkwood's administrative support of CBE, it was decided to make it a goal of our vocational-technical programs to convert to competency-based education by 1982. This goal was decided upon by all department heads when establishing division goals in 1977.

The process of converting a program to CBE (see Appendix J) has been adapted from that used under FIPSE and been incorporated in a guidebook, *A Guide for Converting Kirkwood Training Programs to Competency-Based Education* (1978) to be used by all vocational-technical programs.

This goal of CBE conversion and the resultant guidebook and in-service program (to begin Fall 1978) is probably the most immediate and most extensive impact resulting from the FIPSE project.

Creation of the Instructional Development Center

An Instructional Development Center was created in the fall of 1977 as an outgrowth of FIPSE. This center is now directed by the former FIPSE project director and is staffed by two instructional developers, one of whom was on FIPSE funding.

The IDC reports directly to the Associate Superintendent of Education (Kirkwood's equivalent to the Vice-President for Academic Affairs). The IDC has been charged with a newly initiated Program Development Fund that solicits and offers monetary support for innovative instructional ideas by all Kirkwood faculty. The IDC has also been made in charge of all campus staff development for the future. The latter two responsibilities are in addition to the IDC's

regular duties of offering assistance and information for instructional and curriculum development to all Kirkwood faculty.

It is evident to us that without the spark of the FIPSE project, recognition of the need for the creation of an IDC and the role it plays would have been long in coming.

Retention and Support for the Developmental Department

The college was unable to maintain the same level of support for the developmantal math and reading programs that it did under FIPSE. However, the function and form of the department was retained. With partial FIPSE funding the staff consisted of one director, two reading specialists, two math specialists, one counselor, and one secretary. Beginning in the fall of 1978 the staff will be one director/counselor, one and one-half reading specialists, one math specialist, and one secretary.

The college feels that the developmental department plays a significant role in accomodating our varied student population. This role is essential with an open-door policy such as Kirkwood's and has proven especially beneficial to our students enrolling in competency-based programs.

Allied Health Professions' Special Improvements Grant

Kirkwood's Health Occupations Department is currently using the competency-based education model developed in the FIPSE project to competency base and reorganize several of their programs with the help of a federal grant. Two instructional developers were funded as a result.

Several grant proposals have been and are being written by

Kirkwood's departments to solicit funding for instructional improvement projects. Most of these projects specify that a competency-based curriculum is to be developed. It is our feeling that the FIPSE project generated a tremendous interest in instructional improvement and CBE and the active solicitation of funding for that purpose.

One further example is Kirkwood's Water-Wastewater Technician's program. This program has received federal funding for the competency basing of its program--again a direct result of Kirkwood's success with FIPSE.

Arts & Sciences/Community Education Interest in CBE

Though most of the competency-basing activity at Kirkwood is in the vocational-technical branch (the FIPSE project dealt exclusively with voc-tech), our Arts and Sciences and Community Education branches have become very interested in CBE. Though it would be misleading to say that universal interest existed, it is safe to say that the interest level is high. Arts and Sciences faculty and department heads both paid a visit to and received Alverno College FIPSE project coordinators to discuss that college's famous competency-based curriculum. We believe that several competency-based instructional projects will be coming out of Arts and Sciences and Community Education in the next year or two.

Working Relationships with Other Kirkwood Services

It did not take long for Kirkwood's Learning Resource Center and Educational Media Department to meet FIPSE staff and instructors. A new working relationship has been created between instructional development specialists, resource personnel, production personnel and instructors. This has resulted in several instructors utilizing

production facilities that they had previously been too reticent to use and requesting and receiving from the Learning Resource Center materials and services they were previously unaware of (i.e. ERIC searches and Task Inventories).

The FIPSE project and the resultant materials produced has also created the realization that Kirkwood needs a marketing arm and a distribution point for college-produced materials. Currently the college bookstore is being utilized for distribution. A marketing effort is still under discussion. The FIPSE project made many realize the excellent capabilities of both our instructional personnel and Educational Media production crews for turning out high-quality instructional materials.

In summary, we see a tremendous amount of interest in competency-based education by administration and faculty at Kirkwood. The level and scope of interest can be directly attributed to the work of the FIPSE project. Certainly, some remain skeptical as to the worth of competency-based education, but many others wholeheartedly endorse the concept. We have found that contact with CBE and the resultant overcoming of "fear of the unknown" produced instructors and staff who became committed to CBE and what it stands for.

DISSEMINATION AND EXTERNAL IMPACT OF KIRKWOOD'S FIPSE PROJECT

The goal of disseminating the effects, products, and processes of our FIPSE project was actively sought in the third year. A variety of mechanisms were established to realize this goal. Foremost was the policy developed to allow the campus bookstore to serve as a central clearinghouse for receiving purchase orders and mailing project-produced modules and videotapes to external parties. This policy will probably be expanded to the products of the whole college and may even be the seed that forces the creation of an instructional materials marketing arm at Kirkwood.

Other dissemination mechanisms included workshops, presentations, listing the project with various educational and professional associations, articles, letters, and phone calls.

A brief rundown of generalized dissemination activities follows:

Instructional Programs

* The creation and mailing of order forms for materials produced in the six programs nationwide.
* Presentations at two ACCTion Consortium meetings by faculty and project staff.
* Presentations to several state-level meetings of professional associations that faculty and project staff were associated with.
* The presentation by project faculty at their respective pro-

fessional association's national meetings.

* The housing of project-produced material by Instructional ACCTion.
* The dissemination of information and materials on the FIPSE process through the Iowa Network for Professional and Organizational Development.

Developmental Programs

* Mailing of informational brochures to over 150 institutions and organizations. (See Appendix L)
* Seven state workshops.
* Presentations and materials made available at three national association conventions.
* Articles prepared for publication.
* The creation of a position for statewide dissemination of FIPSE developmental materials for ABE teachers funded by the Department of Public Instruction.
* The submission of FIPSE developmental materials to a catalog to be produced by the International Reading Association.
* Various workshops for associations of both high school and college teachers of reading, math, and vocational-technical education in the state.

CONCLUSIONS

Initial project analysis and research must not be slighted as the resulting information will be crucial in providing direction for the duration of the project. Decision makers and key participants need to be identified and their commitment secured at the onset of the project.

A project plan needs to be developed that is relevant to the project goals and setting and which also includes a functional communication network, a development procedure, and a timeline of tasks. Based on reliable feedback--the plan should be refined and/or revised as the project continues.

When developing competency-based education curriculum, review existing sources of competencies and employment trends. Then actively involve an advisory committee (composed of individuals in the occupation-both employers and employees and present and former students of the program) as they will be able to provide more relevant information on curriculum/employment needs in the occupation. And once involved they will continue to provide valuable information and assistance.

If a competency survey is going to be utilized to validate the competencies, work with data processing personnel during survey format development in order to efficiently obtain usable data.

Frustration about who is to do what next and how, can be alleviated through an active, organized project orientation which clearly and concisely communicates the process model and tasks involved to the project staff. This emphasis broadens to in-service activities for other members of the organization as the project matures.

Faculty support as well as budgetary support must be available to developmental learning centers if they are going to continue to serve students. To build faculty support an in-service/orientation program to insure effective communication of the services provided by the development center needs to be provided for faculty members.

The developmental learning center, with limited personnel, must set parameters on the population of students it can effectively serve. Trying to be everything to everyone will result in little benefit to anyone.

An assessment or evaluation procedure which assists in ascertaining project outcomes should be devised early in the project and followed in order to provide data for accurate revision/refinement activities.

Where does this find us at the conclusion of our FIPSE project? We realize that CBE is not an educational panacea but we have been able to do a thorough curriculum review and make sound revisions based on technological and occupational changes. And in addition to a relevant curriculum, we provide developmental assistance to those who need it.

We have not been able to describe in this report the enthusiasm and feelings of accomplishment that our FIPSE project has generated. But though the project ends, the motivation it has inspired will continue to impact the institution for the benefit of our students.

APPENDIXES

APPENDIX A

TIMELINE FOR FIPSE EVALUATION ACTIVITIES

METHODOLOGIES	Year I												Year II												Year III											
	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6
External Visitation									*												*														*	
Student Attitudes of Instruc.								*													*													*		
Student Attitudes of Program								*													*													*		
Recent Grad. Attitudes									*												*													*		
Employer Attitudes									*												*													*		
5-Yr. Grad. Report									*												*													*		
Advisory Comm. Ques.									*												*													*		
Videotape Eval.	----------												----------												----------											
Student Enrollment													*												*											
Retention, Placement													*												*											
Instructor Interviews									*												*													*		
Student Perceptions of Teaching					*			*			*					*			*			*					*			*			*		

MODEL FOR COMPETENCY IDENTIFICATION

A. Selection of Occupation(s) for which competencies will be identified

B. Write Job Description(s) for occupation(s)

C. Develop Worker Mobility Chart

D. Develop Task Inventory for selected occupation(s)

1. Identify major occupational work divisions
2. List occupational tasks for major divisions using
   a. available task inventories
   b. program specialists
   c. business, professional, and industrial specialists
   d. state and national professional and/or certification agencies
   e. State Dept. of Public Instruction
   f. program advisory committee
   g. program graduates
   h. employers of occupation
   i. supervisors of occupation
3. Determine criticalness of each task for occupational performance by
   a. structured interviews with workers
   b. alternative research processes
4. Advisory committee identification of entry-level jobs and jobs in two-step continuum
5. Develop tentative list of competencies needed to perform critical tasks
6. List evaluated by advisory committee for clarity and specificity
7. Identification of common core competencies

APPENDIX B

UNIT ____ _____

UNIT INTRODUCTION	
UNIT SAFETY	
UNIT MODULES	
UNIT DIRECTIONS	

MODULES

____ _____

____ _____

____ _____

____ _____

____ _____

____ _____

MODULE ____ TASK _____	Rationale	Specific Obj.	Terminology	Job Sheet	Tools & Equip.	Procedures	Post Test

ORDER FORM FOR MEDICAL ASSISTANT PROGRAM VIDEOTAPES

Order Here	Kirkwood Catalog Number and Tape Title	Length	Cost
	MEDICAL TERMINOLOGY		
	KHO-103 Introduction to Medical Terminology	15 min.	$30.00
	KHO-104 Medical Terminology: Five Basic Rules	20 min.	$30.00
	KHO-105 Medical Terminology: Suffixes	10 min.	$30.00
	KHO-106 Medical Terminology: Prefixes	20 min.	$30.00
	KHO-107 Medical Terminology: Adjectival Endings	16 min.	$30.00
	KHO-108 Medical Terminology: Verbal Derivatives	15 min.	$30.00
	KHO-109 Medical Terminology: Word Roots I	17 min.	$30.00
	KHO-110 Medical Terminology: Word Roots II	21 min.	$50.00
	INSURANCE		
	KHO-121 Introduction to Insurance	6 min.	$30.00
	KHO-122 Insurance Terminology	9 min.	$30.00
	KHO-123 Rules for Completing Insurance Forms	7 min.	$30.00
	KHO-124 Processing and Filing Insurance Claims	3 min.	$30.00
	KHO-127 Foundation of Medical Care	4 min.	$30.00
	KHO-125 Capitalization and Closed Panel Insurance	4 min.	$30.00
	KHO- 92 Blue Cross/Blue Shield, Part I	60 min.	$50.00
	KHO- 93 Blue Cross/Blue Shield, Part II	60 min.	$50.00
	KHO-111 Wilson and Co., Inc., Insurance and Related Plans: Introduction	5 min.	$30.00
	KHO-112 Related Insurance Benefits	6 min.	$30.00
	KHO-113 Sick Pay Benefit Program	8 min.	$30.00
	KHO-114 Hospital Information Forms	5 min.	$30.00
	KHO-115 Hospitalization Claim Forms	6 min.	$30.00
	KHO-116 Physician's Statement	4 min.	$30.00
	KHO-117 Vision Care Benefit	4 min.	$30.00
	KHO-118 Employer's First Report of injury	9 min.	$30.00

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

APPENDIX D

Order Here	Kirkwood Catalog Number and Tape Title	Length	Cost
	INSURANCE CONTD.		
	KHO-119 Workmen's Comp. Memo of Agreement	5 min.	$30.00
	KHO-120 Workmen's Comp. Employees Report of Benefits Paid	4 min.	$30.00
	KHO-126 CHAMPUS insurance	14 min.	$30.00
	MEDICAL LAB PROCEDURES I, II, III		
	KHO-128 The Urinary System	14 min.	$30.00
	KHO-129 Urinalysis: Physical Exam of the Urine	10 min.	$30.00
	KHO-130 Urinalysis: Chemical Exam of the Urine	12 min.	$30.00
	KHO-131 Urinalysis: Microscopic Exam of the Urine	9 min.	$30.00
	KHO-132 Catheterization of the Female Patient	9 min.	$30.00
	KHO-140 Complete Urinalysis	5 min.	$30.00
	KHO- 97 The Electrocardiogram	16 min.	$30.00
	KHO- 98 Setting up an EKG Machine	1 min.	$30.00
	KHO- 99 Operating the EKG Machine	17 min.	$30.00
	KHO-100 Mounting an Electrocardiogram	6 min.	$30.00
	KHO-101 Innovation in Electrocardiology	4 min.	$30.00
	KHO-102 Troubleshooting an Electrocardiogram	4 min.	$30.00
	KHO-133 Introduction to Pharmacology	17 min.	$30.00
	KHO-134 Pharmacology: Drug Legislation and Standardization	15 min.	$30.00
	KHO-136 Pharmacology: Administration of Drugs	12 min.	$30.00
	KHO-135 Prescriptions	5 min.	$30.00
	KHO-137 Pharmacology: Parenteral Administration	15 min.	$30.00
	KHO-143 Assembling the Syringe and Preparing Medication	12 min.	$30.00
	KHO-138 Subcutaneous Injections	8 min.	$30.00
	KHO-144 Intradermal Injections	8 min.	$30.00
	KHO-139 Intramuscular Injections	13 min.	$30.00

Order Here	Kirkwood Catalog Number and Tape Title	Length	Cost
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	KHO- 96 Positions and Draping of Patients for Physical Exams	14 min.	$30.00
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	KHO- 95 Tray Set-ups for Various Examinations	12 min.	$30.00

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Please note that the print materials shown here are closely supported by the videotapes shown on the order form on the following pages. The worksheets and reviews are coordinated to various tapes. Please limit your requests to one copy each of the desired courses.

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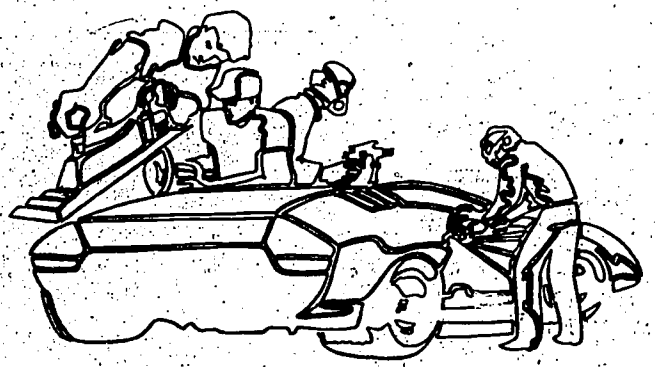
Kirkwood Community College

Auto Body Collision Repair



Curriculum Materials Developed
Under the Auspices of
THE FUND TO IMPROVE POST SECONDARY EDUCATION

preface

After having worked in and operated body shops for 15 years, I started teaching Auto Body. As an instructor and as an employer, I became aware of an inflexible fact: Body Repair people, if they are good, tend to have an artistic temperament and believe that their way is the best or only way to accomplish a repair, and for them it usually is. It has been my experience that if you give the same repair to 10 good repair people, it will be done well in at least 9 different ways. A good student may reflect some of his instructor's ideas, but if he is going to be worth his salt as a flat-rate beater, he will use his initiative and devise his own "best" methods.

How would you like to be able to redo a windshield installation demonstration for the student who was absent that day without jeopardizing an expensive piece of glass? Would it be of value to have instruction available for review at any time and allow students to progress at their own rate? Would you like to accept students into the program at various times throughout the year and place graduates as job opportunities exist rather than in one surge based upon the school calendar? Do you want more time to work with each individual student's needs in both the classroom and the shop?

This series of units (even though not complete) composed of assigned readings, video demonstrations, written questions, and task job sheets, coupled with the instructor's ingenuity, can help answer these questions.

The content or methodology may not be "the" way it is in your eyes, but it is hopefully flexible enough to allow you to branch out any way you see fit. I believe that you will agree that the theory involved in the presentations is valid, usable, and clearly represented.

Neil Klinefelter,
Coordinator-Instructor
Auto Body-Collision Repair Program
Kirkwood Community College
Cedar Rapids, Iowa

introduction

Under the auspices of the Fund for the Improvement of Post Secondary Education (F.I.P.S.E.), Kirkwood Community College's Auto Body-Collision Repair program was funded to analyze and develop an instructional program designed to address its concerns.

Many of these concerns are probably yours also. These concerns include:

a. Flexibility of course offerings.
b. More efficient space usage.
c. Flexibility in accepting and graduating students more times throughout the year.
d. Flexibility in scheduling students in the lab.
e. Reacting to enrollment fluctuations.
f. Reduce reliance on "live" vehicles for all demonstrations.
g. Assurance of students developing the "basics" before progressing to advanced work.
h. Facility available for in-service training of trade personnel.

These concerns are based upon the desire to graduate a student who will be capable of surviving a competitive shop situation where additional experience can be gained. No program turns out an accomplished journeyman in nine months. Instead, the program must make available to the student the knowledge, theory, and skills on which to build a career. It should hopefully develop the work habits and trade identification needed to specialize in a specific segment of the trade if desired.

In order to arrive at such a program, it was necessary to divide the trade skills into their smallest parts-competencies. These competencies were then submitted to persons in the trade to prioritize by usage and importance and add to or discard according to the needs of the trade. Included in this group were: shop owners, managers, employees, insurance claims persons, independent adjusters, franchise dealers, and jobbers. The resultant inventory of competencies were then organized into this course of study.

program format

The Auto Body-Collision Repair curriculum has been divided into instructional content units. These units are grouped into two levels, introductory (units 1-12) and advanced (units 20-25). Although at this time some units are yet to be finished, each completed unit includes: (1) a rationale defining the importance of the content covered in relation to the trade, (2) a list of learning objectives, (3) a job sheet listing a variety of learning activites (i.e. reading assignments, video tapes to view, demonstratons), and (4) worksheets to be completed by students while completing the learning activities. These worksheets are also applicable in the shop for reinforcing the theoretical information or demonstration.

Some units will also include: (1) a vocabulary list clarifying new terms or new math concepts for the student; (2) a listing of further tasks or sources to help establish the operation in the student's work habits.

The video tapes and written material are presented in a manner to allow them to be used in conjunction with one another or as separate instructional aids. The tapes covering specific demonstrations of procedures can stand by themselves and have been used with success in this manner.

UNIT 1-SAFETY (Not Yet Completed)

UNIT 2-BODY TOOLS & EQUIPMENT
Covers the safe operation and maintenance procedures of the air systems and regulators, air power tools, lifts and stands, hydraulic porto-power, pop rivets, and battery charger.

UNIT 3-ADHESIVES AND SEALERS
Deals with applications of common body shop adhesives; amber and black weatherstrip adhesive, trim adhesives, glass mastic type sealants, undercoats and sound deadeners and epoxy type glass hardware adhesives. This series helps the student to realize the different products and their applications and limitations within the trade.

UNIT 4-MOLDING TYPES AND REMOVAL
Covers molding attachment hardware and the procedures for removal and replacing exterior trim moldings.(Not Yet Completed)

UNIT 5-(Not yet completed)

UNIT 6-ELECTRICAL
Deals with basic circuits, fuses, relays and breakers. Covers applications for bulbs and sealed beams with troubleshooting for chassis wiring and accessory electrical components.-(Not yet completed)

UNIT 7-COOLING SYSTEMS
Deals with the function and replacement of radiator and hoses, fan, water pump and shrouds.(not yet completed)

UNIT 8-EXHAUST
Covers usual exhaust system components and replacements done in a body shop. Gives attention to catalytic converters and their replacement and clearances.(Not yet completed)

UNIT 9-WELDING
Utilizes the entry modules from the oxy-acetylene welding program here at Kirkwood. It then spins off into the actual sheet metal welding used in the body shop. M.I.G. and dual probe spot welding are in the developmental stage.

UNIT 10-FRAME AND SUSPENSION
Attacks the frame damage from several angles according to damage and frame type. Has sections on the use of gauges and possible ways to go about repairing the damage usually found on the crash unit.

UNIT 11-GLASS INSTALLATION
Covers first the differences in application, structure and workability of tempered and laminated auto glass. After the students are indoctrinated in this area, they are given demonstrations of different methods of installation of both static and moveable glass. The static glass section covers tape, glue-in installations and 3 types of pinch welt and weather strip installation. All are of late model type applications. The applications cover the use of pinch welt primer, tape and spacer blocks on the glue, and the use of both specialized lock welt tools and cord pull in installation on the weather strip types. Moveable glass is covered in a general application method due to the many ways of attachment of the glass.

UNIT 12-VEHICLE I.D.
Tells why you'd better know what you're working on and how to decipher (from the I.D. plates) what it is.

UNIT 20-TRIM
Deals with Headliners, door trims, seat trim, and vinyl top repair. This unit works with the interior and exterior trim areas repair and/or replacement.

UNIT 21-CHASSIS SHEET METAL
Deals with the "dog house" and its components from usual hood and fenders to repairs on flexible Enduro type bumpers and fiberglass grill shells. Covers basic build up to hood alignment.

UNIT 22-REFINISHING
Deals with the theory of paint, covering solvents, characteristics and overlay compatibilities. It also covers alkydes and acrylic enamels and lacquers. (Tapes on catalyzed and epoxy finishes are not yet completed.) The existing structure covers primers, primer surfacers and sealers, as well as color coats. The student also has exposure to paint gun use, cleaning, and adjustment. This area also includes flexible finishes (Dexlar, etc.). The proper sanding techniques for color coats rounds out this area.

UNIT 23-(Not yet completed)

UNIT 24-METAL STRAIGHTENING AND ALIGNMENT
Covers minor pop-ins to upsets to shrinking stretches, including a multitude of metal work from rough out to pick and grind or file. Showing the molecular structure of steel when damaged or straight, it addresses itself to how to control straightening processes by understanding why the metal does what it does. Will ultimately cover door and ¼ skin type replacement and alignment. Covers both hammer and dolly and pressure on tension hook-up straightening.

UNIT 25-BODYFILLERS
Covers applications and procedures for use of body fillers. Leading includes cleaning, tinning, paddle finishing and file or grinder shaping to contour. Plastic fill covers preparation of the panel, mixing the material, application and sanding to contour. Both areas are covered step by step, stressing procedures that are accepted as effective in practice. The final sanding of fill material covers the problem of undercutting the transition area of the fill, explaining ways to avoid the bad feather edges usually found in student's work.

AUTO BODY—COLLISON REPAIR

INSTRUCTIONAL VIDEO TAPE DEMONSTRATIONS

An integral component of most units is the instructional video tape demonstrations which have been developed at Kirkwood. Each video tape instructs the student on a particular procedure and-or knowledge of the auto body trade. These color video tapes average approximately 15 minutes in length and are available in ¾" video cassette format.

The following is a list of produced instructional video cassette demonstrations and a brief description of each. The tapes are listed in sequence by number i.e. (2.2) indicating the unit and module. The KTI and KAB* numbers refer only to a Kirkwood catalog identfication.

* KAB video tapes were not developed under the FIPSE Federal Grant.

2.1
USE AND MAINTENANCE OF THE AIR SYSTEM
(KTI-91)
General use and care of compressor, transformer and lines and the basic manifold design, clear, complete.
Klinefelter (8 min. C)

2.2
USE AND CARE OF THE AIR REGULATER (KTI-55)
Klinefelter (6min. C)

2.3
USE OF AIR IMPACT CUTTER (KAB-10)
Covers applications and use of (Sioux) air impact cutter with upper and edging bits.
Klinefelter (6 min. C)

2.3
AIR DRIVEN IMPACT TOOLS (KAB-09)
Use and maintenance of air impact cutter and ½" drive wrench.
Klinefelter (8 min. C)

2.3
AIR DRIVEN GRINDER (KAB-11)
Safety, use and care of air grinder (L-handle type used).
Klinefelter (8 min. C)

2.3
D-A SANDER (KAB-02)
Beginning tape explains safety, operation and use maintenance of random orvital air sander.
Klinefelter (12 min. C)

2.3
GRINDING TECHNIQUES (KTI-112)
Covers some of the finer points of body grinder use (patterns, contours and the use of a hex cut disc) includes grit selection.
Klinefelter (10 min. C)

2.3
OPERATION AND MAINTENANCE OF AN AIR-DRILL OR AIR-GRINDER (KTI-52)
Points out uses and limitations of "Blue-dart" type grinder.
Klinefelter (8 min. C)

2.3
USE OF AN IN LINE AIR FILE (KTI-57)
Klinefelter (16 min. C)

2.4
SAFETY, USE AND MAINTENANCE OF AIR POWERED BUMPER JACKS (KTI-51)
Klinefelter (7 min. C)

2.4
SAFETY, USE AND MAINTENANCE OF HUDRAULIC FLOOR JACKS (KTI-53)
Use, checking, filling, etc.
Klinefelter (10 min. C)

2.4
HYDRAULIC BODY JACK (KTI-80)
Use and care of "Porto Power" type jacks.
Klinefelter (13min. C)

2.6
APPLICATION PROCEDURES FOR SELF-EXPANDING POP RIVETS (KTI-50)
Shows use on mouldings and panels.
Klinefelter (10 min. C)

2.7
SAFE OPERATION OF A BATTERY CHARGER (KTI-49)
Klinefelter (13 min. C)

3.1
BODY SEALERS AND UNDERCOATS (KTI-35)
Primers sealers, etc.
Klinefelter (14 min. C)

3.1
COMMON BODY SHOP ADHESIVES (KTI-34)
Deals with w.s & trim adhesives.
Klinefelter (19 min. C)
11.2
TAPE-KIT WINDSHIELD INSTALLATION WITH EXPOSED WIPERS (KTI-31)
Step by step from wire cut- out to pinch welt primer to tape installation.
Klinefelter (28 min. C)
11.2
GASKET-TYPE WINDSHIELD INSTALLATION (KTI-39)
Removal and replacement to an intact glass installation using string in pinch welt.('75 Ford compact is demo)
Klinefelter (17 min. C)
11.2
LOCK-WELT & SELF-LOCK WINDOW INSTALLATION (KTI-29)
Step by step installation of stationary glass using locking weatherstrips.
Klinefelter (12 min. C)
11.3
TYPES OF ADJUSTMENTS FOR AUTO DOOR GLASS (KTI-71)
Demonstrates components of mechanism and adjustment procedures.
Klinefelter (9 min. C)
20.3, 11.3
DOOR TRIM PAD REMOVAL (KTI-85)
Shows major types of trims and hardware removal.
Klinefelter (8 min. C)
11.3
ATTACHING WINDOW RISER CHANNELS WITH STRUCTURAL ADHESIVE (KTI-38)
(3-M-8101 used as demo)
Klinefelter (9 min. C)
13.1
WHADIZZIT HOW TO IDENTIFY THE AUTO (KTI-92)
How to decipher the serial and ID plates on American cars.
Klinefelter (10 min. C)
20.1
SEAT REMOVAL FROM AN AUTOMOBILE (KTI-56)
Removal procedures and necessary electrical interlocks.
Klinefelter (8 min. C)
20.1
REMOVING AND REPLACING SEAT CUSHION TRIM (KTI-58)
G.M. seat used in tape includes jack stringers and complete envelope repair
Klinefelter (18 min. C)
20.1
REMOVING AND REPLACING SEAT BACKREST TRIM
G.M. bucket seat used in demo. Complete removal and replace
Klinefelter (19 min. C)
20.2
CLOTH HEADLINER REMOVAL (KTI-96)
Removal and replacement to headliner from inverted top.
Klinefelter (7 min. C)
10.1
TYPICAL FRAME DAMAGE (KTI-90)
Typical rear & front end damages yield point by yield point.
Klinefelter (6 min. C)
10.1
COMMON AUTOMOBILE FRAME TYPES AND APPLICATIONS (KTI-54)
Covers common frames and Uni-body
Klinefelter (8 min. C)
10.1
DAMAGE EFFECT OF FORCE ON SHAPE (KTI-80)
Hoover (12 min. C)

10.1
REAR END COLLISION, UNITIZED BODY (KTI-81)
Ford Pinto as demo. Shows body & uniframe deflection.
Klinefelter (14 min. C)
10.2
FRAME POWER EQUIPMENT-PORTABLE BEAM (KTI-110)
Introductory level presentation on the portable beam type frame and sheet metal machine.
Klinefelter (7 min. C)
10.2
FRAME POWER EQUIPMENT-POWER TEST (KTI-111)
Introduces student to the power "post" or "tower" type power source.
Klinefelter (7 min. C)
24.1, 10.2
TENSION HOOK UP & ACCESSORIES (KTI-84)
Demonstrates pull hook up an hardware on damages.
Klinefelter (8 min. C)
10.2
USE OF FRAME GAUGES (KTI-89)
Chain and strap drop type explained and demonstrated. (Guy Chart & Buske used as Demo).
Klinefelter (9 min. C)
11.1
WINDSHIELD & SIDEGLASS TYPES, CHARACTERISTICS AND APPLICATIONS (KTI-24)
Covers development, breaking characteristics and workability and applications of shatterproof and tempered glass.
Klinefelter (17 min. C)
11.2
EPOXY GLASS HARDWARE ADHESIVES (KTI-37)
Deals with both 1 and 2 part epoxy adhesives for rear view mirror and lock installation ("locktite" used)
Klinefelter (11 min. C)
20.4
MAKING A VINYL REPAIR GRAIN MATRIX (KTI-41)
Shows fabricaion of graining matrix using heat gun to cure. (Uticolor used in demo)
Klinefelter (9 min. C)
20.4
VINYL TOP REPAIR (KTI-42)
Covers heat gun vinyl weld method of repair on small tears.
Klinefelter (18 min. C)
20.4
APPLICATION OF VINYL TOP AND UPHOLSTERY DYE (KTI-47)
Uses lacquer base spray on dye.
Klinefelter (19 min. C)
21.2, 21:1
REPAIR OF URETHANE BUMPERS AND GRILLS (KTI-36)
Shows gouge repair on "soft" bumper. ('76 Mustange bumper used).
Klinefelter (21 min. C)
21.2
POLYESTER FIBERGLASS FRACTURE REPAIR (KTI-32)
Shows damage preparation and complete repair on small fracture in Corvette door.
Klinefelter (28 min. C)
22.1
INTRODUCTION TO PAINT (KAB-04)
Lists and explains component parts of paints and their functions.
Klinefelter (12 min. C)

22.1
DRYING PROPERTIES (KAB 05)
Explains and compares the characteristics of Polymers as opposed to Evaporative drying finishes. Starts interest in non compatability in overlaying
Klinefelter (15 min. C)
22.1
PRIMERS SURFACERS-SEALERS (KTI-43)
Deals with the applications of each in an attempt to clarify
Klinefelter (10 min. C)
22.1
ENAMEL PRIMER-SEALER THINNING RATIOS (KTI-44)
Klinefelter (13 min. C)
22.1
THINNER USAGE BY TEMPERATURE (KTI-45)
Gives usual temperature breaks for thinness. (DuPont, Ditzler are used in demo)
Klinefelter (10 min. C)
22.1
CLEANING THE BINKS No. 7 POINT GUN (KAB-01)
Covers usual and complete disassembly for cleaning of Binks No. 7.
Klinefelter (17 min. C)
22.1
POINT GUN OPERATION (KAB-03)
Covers the usual gun problems and adjustments.
Klinefelter (18 min. C)
22.2
SANDING TYPES (KAB-08)
Sanding types opens the door to different types of sanding, very basic.
Klinefelter (18 min. C)
22.2
FINAL SANDING (KTI-100)
The finer points of getting the surface smooth-block sanding-trace coating, etc.
Klinefelter
22.2
PRE-CLEANING (KTI-99)
Entry level masking techniques covers different tape widths, use of apron taper, etc.
Klinefelter (13 min. C)
22.4
SPRAY TECHNIQUES (KAB-06)
Addresses continuity, lay up, and profession in gun techniques, a sequence is stressed.
Klinefelter (15 min. C)
22.4, 25.2
PRE-PRIMER SANDING OF FILL MATERIAL (KTI-109)
Covers the proper leveling and feathering of fill material in relationship to the panel itself.
Klinefelter (7 mmin C.)
22.4
DEXLAR FLEXIBLE FINISHES (KTI-48)
Explains use and application of flexible finish.
Klinefelter (6 min. C)
22.4
COLOR-MATCHING ACRYLIC LACQUERS AND ENAMELS (KTI-33)
MIC film shows repair with lacques using 2 gun method.
(may be acquired from MIC) (35 min. C)
22.4
COLOR SANDING AND COMPOUNDING (KTI-26)
Sanding new color and compounding to level
Klinefelter (14 min. C)

22.5
SANDING AND GRIT SELECTION (KAB-07)
Covers grits and papers and their use. (not particularly good, confusing)
Klinefelter (6 min. C)
24.1
AUTOMOBILE SHEET METAL (KTI-61)
Explains and demonstrates what happens inside metal when it is stamped or damaged. Good metalwork start.
Hoover (14 min. C)
24.1
THE AUTO MANUFACTURING PROCESS (KTI-63)
Shows sequence of production to familiarize student with assembly line produced unit.
Hoover (11 min. C)
24.1
GAINING STRENGTH (KTI-64)
Shows how designers and strength with contour.
Hoover (9 min. C)
24.2
BASIC HAND TOOLS (KTI-77I)
Shows basic body tool selection and application.
Klinefelter (11 min. C)
24.2
METAL STRETCH & SHRINK (KTI-66)
Defines metal stretch and demonstrates shrinking. Good, clear presentation.
Hoover (13 min. C)
22.2
WORK HARDENING (KTI-65)
Defines, demonstrates work hardening.
Hoover (10 min. C.)
24.2
SHEET METAL UPSET (KTI-67)
Shows upset in low crowned panels. Recommends procedure for repair.
Hoover (11 min. C)
24.3
HOW TO GAIN ACCESS (KTI-79)
Shows some means of reaching the unreachable.
Hoover (11 min. C)
24.5
DOOR ADJUSTMENT (KTI-94)
Basic layout on making the door fit the hole.
Klinefelter (7 min. C)
24.5
DOOR PANEL REMOVAL (KTI-74)
Hooover (6 min. C)
24.6
OPEN FENDER STRAIGHTENING (KTI-78)
(Ford Pinto example) shows rough out through metal finishing, step by step.
Klinefelter (31 min. C)
26.2
PLASTIC FILLER (KTI-23)
Covers how-where-when to use plastic body filler.
Klinefelter (13 min. C)
25.2
APPLICATION OF PLASTIC FILLER (KTI-25)
Mixing, applying and leveling plastic fill.
Klinefelter (25 min. C)
25.2
BARE METAL PREPARATION (KTI-28)
Preparing metal with metal conditioner.
Klinefelter (13 min. C)

25.3
USE OF METAL CONDITIONERS WITH LEAD AND PLASTIC FILL (KTI-30)
Shows advantages and limitations of etching liquids
Klinefelter (15 min. C)

25.3
LEADING APPLICATION (KTI-27)
Covers cleaning, tinning, applying, paddle finishing lead fill
Klinefelter (20 min. C)

Brochure designed and printed by
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ORDER FORM FOR AUTO BODY CURRICULUM MATERIALS

Check here if you wish to order the Student-oriented, written Instructional Package. Cost: $ 20.25
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VIDEOTAPES

Order Here	Kirkwood Catalog Number and Videotape Title	Length	Cost
	UNIT 2 AUTO BODY SHOP EQUIPMENT KTI- 91 "Use and Maintenance of the Air System"	8 min.	$30.00
	KTI- 55 "Use and Care of the Air Regulator"	6 min.	$30.00
	KAB- 09 "Air Driven Impact Tools"	8 min.	$125.00
	KAB- 10 "Use of Air Impact Cutter"	6 min.	$125.00
	KAB- 02 "D-A Sander (open-ended)"	12 min.	$125.00
	KTI- 52 "Operation and Maintenance of an Air-Drill or Air-Grinder"	8 min.	$30.00
	KTI- 57 "Use of an In-Line Air File"	16 min.	$30.00
	KTI- 51 "Safety, Use, and Maintenance of Air-Powered Bumper Jacks"	7 min.	$30.00
	KTI- 53 "Safety, Use, and Maintenance of Hydraulic Floor Jacks"	10 min.	$30.00
	KTI- 80 "Hydraulic Body Jack"	8 min.	$30.00
	KTI- 50 "Application Procedures for Self-Expanding Pop Rivets"	10 min.	$30.00
	KTI- 49 "Safe Operation of a Battery Charger"	13 min.	$30.00
	UNIT 3 ADHESIVES AND SEALERS KTI- 35 "Body Sealers and Undercoats"	14 min.	$30.00
	KTI- 34 "Common Body Shop Adhesives"	19 min.	$30.00
	KTI- 37 "Epoxy Glass Hardware Adhesives"	11 min.	$30.00

VIDEOTAPES

Order Here	Kirkwood Catalog Number and Videotape Title		Length	Cost
		UNIT 10 FRAME AND SUSPENSION		
	KTI- 54	"Common Automobile Frame Types and Applications"	8 min.	$30.00
	KTI- 89	"Use of Frame Gauges"	9 min.	$30.00
	KTI-110	"Frame Power Equipment--The Portable Beam	7 min.	$30.00
	KTI-111	"Frame Power Equipment--Power Post or Tower"	7 min.	$30.00
	KTI- 90	"Typical Frame Damage"	6 min.	$30.00
	KTI- 84	"Tension Hook-up and Accessories"	8 min.	$30.00
		UNIT 11 AUTO GLASS INSTALLATION		
	KTI- 24	"Windshield and Sideglass Types, Characteristics, and Applications"	17 min.	$30.00
	KTI- 31	"Tape-Kit Windshield Installation with Exposed Wipers"	28 min.	$50.00
	KTI- 39	"Gasket-Type Windshield Installation"	17 min.	$30.00
	KTI- 29	"Lock-Welt and Self-Lock Window Installation"	12 min.	$30.00
	KTI- 38	"Attaching Window Riser Channels With Structural Adhesive"	9 min.	$30.00
	KTI- 71	"Types of Adjustments for Auto Door Glass"	9 min.	$30.00
		UNIT 12 VEHICLE IDENTIFICATION		
	KTI- 92	"Whadizzit? How to Identify the Auto"	10 min.	$30.00
		UNIT 20 TRIM		
	KTI- 56	"Seat Removal From an Automobile"	8 min.	$30.00
	KTI- 58	"Removing and Replacing Seat Cushion Trim"	18 min.	$30.00
	KTI- 59	"Removing and Replacing Seat Backrest Trim"	19 min.	$30.00
	KTI- 41	"Making a Vinyl Repair Graining Matrix"	9 min.	$30.00
	KTI- 42	"Vinyl Top Repair"	18 min.	$30.00
	KTI- 47	"Application of Vinyl Top and Upholstery Dye"	19 min.	$30.00
	KTI- 96	"Cloth Headliner Removal"	7 min.	$30.00
	KTI- 85	"Door Trim Pad or Upholstery Removal"	8 min.	$30.00
		UNIT 21 CHASSIS SHEET METAL		
	KTI- 36	"Repair of Urethane Bumpers and Grills"	21 min.	$50.00
	KTI- 32	"Polyester Fiberglass Fracture Repair"	28 min.	$50.00

VIDEOTAPES

Order Here	Kirkwood Catalog Number and Videotape Title	Length	Cost
	UNIT 22 REFINISHING		
	KAB- 04 "Introduction to Paint"	12 min.	$125.00
	KAB- 05 "Drying Properties"	15 min.	$125.00
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	KTI- 44 "Enamel Primer-Sealer Thinning Ratios"	13 min.	$30.00
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Understanding Tractor Transmissions	KAG-80
Identification of Tractor Components and Controls	KAG-81
Tractor Electrical System	KAG-82
Tractor Prestart Checkout	KAG-83
Tractor Lubrication System	KAG-84
Tractor Hydraulic System	KAG-85
Tractor Cooling System	KAG-86

DATA PROCESSING

Blocked Records on Magnetic Tape	KDP-11
Cobol/Job Control Interface	KDP-12
The Cobol Perform Verb	KDP-13

ENVIRONMENTAL HEALTH

Well Drilling Series #1: Sanitary Layout and Design Considerations	KEH-61
Well Drilling Series #2: Set-up and Initial Drilling	KEH-62
Well Drilling Series #3: Final Drilling, Disinfecting and Grouting	KEH-63
Well Drilling Series #4: Installing the Pitless Unit, Pump, and Pressure Tank	KEH-64
Sampling Private Water Supplies	KEH-65
Reconstructing an Unsafe Water Well	KEH-66
Field Testing for Bacterial Quality	KEH-68
Soil Profiles, and Factors of Formation	KEH-102

REPORT OF EXTERNAL EVALUATION TEAM VISIT
Kirkwood Community College
FUND FOR THE IMPROVEMENT OF POST-SECONDARY EDUCATION
(FIPSE) PROJECT
May 22, 1978

Kirkwood Community College will complete the grant to identify competencies and implement a pilot program by June 30, 1978. An evaluation team consisting of Iowa Department of Public Instruction consultants has evaluated the project at the end of each year. These evaluation reports are on file at the department and at Kirkwood Community College. Team members from the department and dates of visitation were as follows:

May 22	Agriculture Program -- Jerry Lamers
May 22	Trade & Industrial Program -- Dale Harris
May 22	Business and Office Program -- Don Smith
May 26	Personal Achievement Program -- Sally Ihne
June 22	Health Occupations Program -- Richard Gamel

The written reports of each of the consultants follows with the exception of Trade and Industrial. Mr. Dale Harris has left the department and no final report will be available for this area.

AGRICULTURAL MECHANICS

Outstanding progress is evident during the past year in the development and implementation of the agricultural mechanics modules. This progress was facilitated by the commitment of the F.I.P.S.E. Project, F.I.P.S.E. and agricultural education staff and the occupying of Washington Hall--Kirkwood Ag Service Center. The development of the F.I.P.S.E. ag mechanics modules and the occupying of Washington Hall will allow Kirkwood to serve

students from all agricultural programs and services in the area of ag mechanics. This service will be provided by individual learning packages; small group instruction around equipment, materials, and facilities for non-traditional as well as traditional instruction in ag mechanics areas.

Twenty-one curriculum modules were developed during 1976-77 and integrated into existing courses during the first through the third quarters, 1977-78. Reports indicate satisfaction with the modules making it easier and for more students to leave the courses with higher skill levels in the area of ag mechanics.

In August of 1977, eight more curriculum instruction areas were identified to be developed for F.I.P.S.E. 1977-78. These activities are to be designed for use in the multi-purpose room of Washington Hall and Rural Building Construction facilities. These eight instruction areas are as follows:

1. Electrical Power
2. Plumbing and Heating
3. Tool Reconditioning
4. Engine Maintenance
5. Power Equipment Operation
6. Farm Facility Automation
7. Carpentry
8. Concrete

Presently, occupational competencies are being validated for seven of the areas.

The Power Equipment Operation area is the first of the eight to be developed. Presently, modules are designed on a two-level basis with 12 units being developed on seven different

power units.

Observations

1. As mentioned earlier in the report, outstanding progress is noted and I commend the staff and "Kirkwood" for their commitment. This progress is no doubt due to the arrangement of having a person, Gary Goodlove, responsible for coordinating the development as well as having adequate time committed to the project.

2. An early review stressed the importance of keeping the entire ag staff informed on the project. With the large number of staff members, as well as their program and curriculum responsibilities, this is not always easy. When visiting with the ag staff, indications are that they feel they are better informed on the development status of the modules.

3. Members of the ag staff have been provided the opportunity to participate in in-service meetings on the material developed and how the modules could be incorporated in the present curriculums.

Recommendations

1. Every avenue must be explored to continue the financial support toward the development and implementations of the ag mechanics modules. The past year has proven what quality and quantity of material can be developed when adequate finances and personnel are available.

2. As the Kirkwood Ag Service Center becomes settled and modules are developed and categorized, consideration should be given to further expanding the concept of having an instructor or instructors delivering specific modules in the center to all students regardless of the programs. I mention the horticul-

tural department, especially, due to the program location. This concept would allow for greater specialization of instruction in all program areas and in return should provide higher quality instruction.

3. In-service to staff and students should be continued to insure that they are informed on what is available and the proper usage.

4. Another strong aspect the past two years has been the validation of competencies needed for entering the specific occupation area. This process has helped to eliminate out of the curriculum "unnecessary or less important competencies." Therefore, allowing for more additional time to increase training in the areas identified.

Summary

The development of the modules in the F.I.P.S.E. Project the past two years should raise the quality of the ag mechanics instruction at Kirkwood as well as for future implications for instruction in the State of Iowa. This progress is not only due to the opportunity provided by the F.I.P.S.E. Project, but to the commitment of F.I.P.S.E. and agricultural staff and administrative personnel at Kirkwood Community College. Those of us who have had the opportunity to view the project from the "outside" commend all involved.

As is often the situation, projects and their funds seem to end just as the long-term benefits start to appear. Therefore, I would hope that the commitment to date could be continued by some means at Kirkwood. This development would provide for quality mechanics instruction in agriculture on a program or individual basis from the preparatory to the supplementary stages

of ag education.

OFFICE EDUCATION

The Office Education Department has developed seventy-one tapes and nineteen modules during their two years of involvement in the F.I.P.S.E. grant. This, of course, does not include the many commercial tapes and materials they have purchased and adapted for their use. The cooperation and enthusiasm of the total Office Education staff is evident through their participation in the project.

The utilization of these materials has been enhanced with the new lab available for office education. All programs and instructors are now located around the lab which should allow easier access and coordination of programs and instructional materials.

The work of Donna Madsen as the lead curriculum developer is evident in the amount and quality of materials developed. Student evaluations of the method of instruction and materials developed indicate that students learn just as well as using traditional methods, but that they seem more at ease, more comfortable with the individualized method of learning. Although much of this may be attributable to instructor expertise, the materials developed and the way they are used must have a large bearing on the student learner.

The Office Education Department expressed the intent to continue using the materials developed, evaluating the results and revising where necessary. All core subjects have been completed and any additional work on CBE will take place in the specialty areas such as medical typing, legal typing, etc.

The one concern expressed by the curriculum developer was the "how to" of using some of the materials. This is a valid concern and like any new tool, a user's manual should be developed so that all instructors teaching these subjects will have a reference source in order to use the materials appropriately.

DATA PROCESSING

The Data Processing Department has developed partial modules in eight courses. They currently include only the course outlines and some competency based objectives. Much needs to be done in both student and instructional materials for these modules.

The Department has been involved in a major curriculum change in the last few months and this will continue to be a problem in the next few months until the new system is at 100% operation and the instructional staff has been through the entire curriculum at least once.

Many of the courses do not have adequate commercial text material for student use. Too often, IBM materials are relied upon for student and instructional use. It is imperative that all staff get involved in curriculum development in order to solve this problem. After discussion with the Data Processing curriculum developer, it appears that the rest of the Data Processing staff has become more receptive to the potential system they may have.

The Department indicates a commitment to continue on their own. With the help of all Data Processing instructional staff, the necessary student and teacher materials may be developed.

DEVELOPMENTAL LEARNING COMPONENT (PERSONAL ACHIEVEMENT PROGRAM)

Kirkwood Community College has done an excellent job of integrating the mathematics and reading components of its developmental learning project into a total program aimed at assisting students who formerly have not achieved well academically.

The first obvious example of this integration appears in the successful development of reading and mathematical exercises related directly to the student's chosen vocational field. In addition, Kirkwood has added at its own cost a developmental writing program to assist students in improving their writing skills. Exercises in this component also relate to a student's vocational interest.

But perhaps the most significant aspect of the integration is the "total student" philosophy which pervades the department. The department counselors and instructors work cooperatively to help students develop personal responsibility for their actions. Thus, students are treated as total human beings and their performance in instructional components of the program is seen as a part of their performance as total human beings. Success groups are run by the department counselors to help students accept responsibility for their actions and to work at achieving academic success.

The following objectives for the developmental program were proposed by Kirkwood Community College for the third year.

After listing each objective I will comment on the progress of the staff members in meeting that objective.

Objective One

The developmental program will continue to be piloted during the third year with the majority of the staff supported by institutional funds, as anticipated at this time.

Comment:

Various budgetary constraints kept Kirkwood from putting the majority of the staff on institutional funds. The equivalent of eleven full-time persons worked in the Personal Achievement Department during fiscal year 1978. Four of these people were on FIPSE funds, two and one-half were on CETA funds and one on an Indo-chinese grant. Thus, approximately three and one-half were on institutional funding.

Objective Two

Curriculum and tests will continue to be revised where appropriate, and the pre-post test evaluation of the program will continue.

Comment:

The Personal Achievement math staff developed a resource guide covering the basic mathematical skills most often taught in Personal Achievement math. This guide provided a cross reference among the six main resource materials and the basic mathematical skills of whole numbers, fractions, decimals, ratios, percent, and word problems. This cross reference will allow both students and instructors to find more readily additional materials for instruction. In addition, the staff

members worked closely with the science department in order to develop additional ways to help science students with their math weaknesses. As a result staff members developed a pre-test involving fractions, decimals, ratios and proportions, and probabilities to give to students at the beginning of each quarter. Mini-courses were set up to assist students in achieving competencies in their weak areas.

The staff also developed a series of twelve worksheets to help nursing students with metrology. The worksheets included sample problems, explanations of problems, and additional problems for the student to work. These worksheets are used with pre-nursing students, students currently taking metrology, and students who have completed metrology but still have some difficulty with the concepts presented.

The staff also continued to collect statistical data on Personal Achievement math students. A large sample of student pre and post-test scores for the computations tests were compiled and the percentile rankings for Kirkwood students were computed and graphed so as to be compared with national percentile ranks.

The staff also developed film strips and worksheets to assist students with metrics.

The reading staff members continued to develop the present reading curriculum. Additional packets were created; all pre-post test and answer keys for developed materials were reviewed, revised, written, printed, and incorporated into the packets; a question and answer file for the comprehension

materials was developed; and study skills materials were collected, organized, and implemented into a study skills course. In addition, tape materials were purchased for thinking, listening, and study skills.

The reading staff members also continued to administer pre-post test evaluation of student skills, and held conferences with all incoming and outgoing students to discuss their needs and accomplishments.

Objective Three

It is anticipated the developmental program will serve two hundred students the third year.

Comment:

Staff members in the Personal Achievement Department far exceeded the goal of serving at least 200 students during the third year of the FIPSE grant, perhaps because the top priority of the staff appears to have been service to students. In the fall quarter 60 students were served in reading, 77 in math, and 41 in writing, accounting for a total of 178 students. In the winter quarter 48 students were served in reading, 47 in math, and 26 in writing, accounting for 121 students. And in the spring quarter 56 students were served in reading, 65 in math, and 23 in reading, accounting for 144 students. Thus, the total for the year was 443 students in the regular programs. Numerous other students were served for briefer amounts of time and worked with the Personal Achievement Department counselor either individually or in success groups.

Student evaluations of the various components of the program were quite positive.

Objective Four

The developmental staff will prepare brief written descriptions of their programs and mail descriptive materials, with approval of the fund, to at least 200 community colleges in the United States. The staff will make its evaluation results known in the descriptive materials.

Comment:

The Personal Achievement staff members were quite energetic in disseminating information about the program.

A. Kirkwood sent its mailing to all ACCTion consortium schools, all Iowa community colleges, and selected other schools known to be committed to developmental education.

Descriptive brochures were not only mailed, but were disseminated at various types of conferences throughout the country. Staff members made major presentations at the National Developmental Conference, Annual Convention of the American Association of Community and Junior Colleges, the International Reading Association at both the regional and national level, the Iowa Association for Life Long Learning, and the Iowa Area School Learning Association meeting.

B. A presentation was also made to twenty participants at the ACCTion competency-based education workshop in Cedar Rapids about the developed materials and reading procedures. Two presentations were made to the Trades and Industry and

Industrial Arts Council in Waterloo on reading in the content area.

The staff provided the three workshops on a regional basis to Iowa community colleges and vocational-technical institutes. One was held at Kirkwood, one at Hawkeye Institute of Technology in Waterloo, and one at Iowa Western Community College in Council Bluffs. At the latter many individuals from two-year institutions in Nebraska attended.

C. Staff members have also published articles in four professional publications concerning the lab and developed materials.

Objective Five

Personnel from other institutions will be encouraged to visit Kirkwood to study its developmental program.

Comment:

Numerous institutions, particularly from community colleges and vocational-technical institutions in Iowa, have visited the Personal Achievement Department at Kirkwood Community College. As a result of these visits, it is evident that the work being done there is being utilized at other institutions. For instance, Hawkeye Institute of Technology in Waterloo, Iowa, has made developmental learning a top priority in the coming years and in developing their own particular program is utilizing much of the Kirkwood materials.

Kirkwood has not only worked with personnel from other institutions but has continued its very intensive in-service training program for Kirkwood instructors. Staff members have

continued the readability service to any staff member at Kirkwood and have done 20 readabilities for Kirkwood staff, Hawkeye Tech, and a Senate hearing. The staff has also designed a new readability form.

Sessions on in-service reading training were offered for new staff members and other interested people. A session was given concerning text evaluation and recognition of student reading problems. Staff members have worked with individual instructors in the use of guided reading procedures and have examined reading material, study guides, and tests. Staff members have also assisted in the selection of text books for vocational and arts and sciences classes.

Objective Six

Kirkwood will duplicate on a cost basis any of the developmental materials requested by other institutions.

Comment:

Staff members had mail order blanks printed for ordering packets. A system for sales and mailing at cost was set up with the campus bookstore, and all orders went to the bookstore where all mailing and record keeping was done. The bookstore staff kept a log of ordering institutions. This log indicates that over 70 institutions have been impacted by the dissemination program, and many more individuals. At the present time a second printing has taken place and the demand continues.

To summarize the work done by staff members in Developmental Learning component of the FIPSE grant has been vital

to the success of many students at Kirkwood, and because of the highly effective dissemination effort of the staff members, the quality materials and effective approach to students is being implemented into many developmental programs in Iowa and elsewhere.

HEALTH OCCUPATIONS

Due to a conflict in schedules, I was unable to visit with the F.I.P.S.E. External Evaluation Team on May 22. This was rescheduled for June 22. Margaret Poorman and Randy Fleckenstein of the F.I.P.S.E. Project reviewed for me the overview of F.I.P.S.E. status to date. I then met with personnel in the environmental health and medical assisting programs.

In both programs the major goals of the F.I.P.S.E. Grant Project have been met satisfactorily. Program faculty from environmental health and medical assisting directly involved with F.I.P.S.E. are to be commended for their efforts.

Environmental Health

The projected enrollment increase from 13 to 26 students has not been realized. There are approximately 11 students currently in the program, showing a slight decrease from the FY 76 enrollment. Efforts directed at counseling and orientation or perspective students need to be undertaken in order to reduce attrition and stimulate career interest. All courses have been modularized and it is reported that the students are accepting the curriculum as well as expected with few problems. The real impact of the program revision is expected to be felt during the 1978-79 school year. Media is expensive and needs modification and it is reported by the coordinator that such

will be accomplished. Transferability of courses and electives are unquestionably an asset to the new program design. Dissemination within the institution and outside the state has begun. Examples are the modules on food supplies and water.

Medical Assisting

Enrollment has been increased slightly since fiscal year 76. The potential to enroll 70 students is present, however. This is near the FY 78 projections listed in the F.I.P.S.E. goals. There are currently 45 students in the program with eight having dropped since their admission last fall. All courses in the medical assistant series have been modularized with media developed for each. Several in the related area are being worked on presently. It is reported that the students are satisfied with the modified curriculum presently in implementation. Dissemination has begun both externally and internally. As a result of sharing the experiences and materials at a national meeting and workshop for medical assistant educators, numerous requests have come from out of state for purchase of materials. As a result of Mary Early's presentation at the national meeting in California, 20 plus letters of inquiry have been made to Kirkwood for medical assisting materials.

PROJECT SUMMARY

This report concludes the Department's external evaluation of the FIPSE project at Kirkwood Community College. The process and the resulting curriculum materials will enhance the vocational programs offered at the college. Although direct funds are no longer available, it is evident Kirkwood Community College will make every effort to continue curriculum improvements because of the success of this project.

The consultants of the Iowa Department of Public Instruction have been very complementary of this project. The resulting curriculum improvements have been viewed by many Iowa schools through consultant and project director efforts to publicize these materials. The dissemination of the curriculum materials will be a continuing process by Kirkwood Community College and the Department of Public Instruction to improve post-secondary vocational education.

The one concern expressed by the curriculum developer was the "how to" of using some of the materials. This is a valid concern and like any new tool, a user's manual should be developed so that all instructors teaching these subjects will have a reference source in order to use the materials appropriately.

DATA PROCESSING

The Data Processing Department has developed partial modules in eight courses. They currently include only the course outlines and some competency based objectives. Much needs to be done in both student and instructional materials for these modules.

The Department has been involved in a major curriculum change in the last few months and this will continue to be a problem in the next few months until the new system is at 100% operation and the instructional staff has been through the entire curriculum at least once.

Many of the courses do not have adequate commercial text material for student use. Too often, IBM materials are relied upon for student and instructional use. It is imperative that all staff get involved in curriculum development in order to solve this problem. After discussion with the Data Processing curriculum developer, it appears that the rest of the Data Processing staff has become more receptive to the potential system they may have.

The Department indicates a commitment to continue on their own. With the help of all Data Processing instructional staff, the necessary student and teacher materials may be developed.

ADVISORY COMMITTEE QUESTIONNAIRE

NAME _____

ADDRESS _____

KIRKWOOD PROGRAM _____

1. How many times did your advisory committee meet during the academic year 1977-78?

   A. We did not meet at all
   B. Once
   C. 2-3 times
   D. 4-5 times
   E. 6 or more times

2. In your capacity as an advisory committee member do you feel adequately informed about the curriculum being taught in your program?

   A. Yes; I definitely feel adequately informed
   B. Yes; generally I feel adequately informed
   C. I have no opinion in this matter
   D. No; generally I do not feel adequately informed
   E. No; I definitely do not feel adequately informed

3. Do you feel that the program's educational goals and objectives are realistic?

   A. Yes; I definitely feel that they are realistic
   B. Yes; generally I feel that they are realistic
   C. I do not know what the educational goals and objectives are
   D. No; generally I feel that they are not realistic
   E. No; I definitely feel that they are not realistic

4. Do you feel that the educational goals and objectives of your program are being adequately met?

   A. Yes; I definitely feel that they are being met
   B. Yes; generally I feel that they are being met
   C. I do not know what the educational goals and objectives are
   D. No; generally I feel that they are not being met
   E. No; I definitely feel that they are not being met

5. Do you feel that suggestions for program changes made by committee members are being given serious consideration by the program coordinator and the instructional staff?

   A. Yes; suggestions are given serious consideration as much as is possible
   B. Yes; suggestions are given serious consideration most of the time
   C. Suggestions are given serious consideration only occasionally
   D. No; suggestions are not given serious consideration as much as I would like
   E. No; suggestions are not ever given serious consideration

6. Do you feel that suggestions for reasonable curriculum changes made by committee members are being put into action?

   A. Yes; suggestions are being put into action as much as is possible
   B. Yes; suggestions are being put into action most of the time
   C. Suggestions are being put into action only occasionally
   D. No; suggestions are not being put into action as much as I would like
   E. No; suggestions are not being put into action at all

7. Since you have become a member of your advisory committee, have any noticeable changes been made in the curriculum or subject content of your program?

   A. Yes; there definitely have been noticeable changes
   B. Yes; generally there have been noticeable changes
   C. I do not have an opinion in this matter
   D. No; generally there have not been noticeable changes
   E. No; there definitely have not been noticeable changes

8. Do you feel that there will be a need in the next five years for students trained in this vocational area?

   A. Yes; there will be greatly expanded employment possibilities
   B. Yes; there will be a slight growth of employment possibilities
   C. Yes; there will be a need, but no foreseeable increase in employment possibilities
   D. No; there will be a slight decrease in employment possibilities
   E. No; there will be a large decrease in employment possibilities

9. Do you feel that the students graduating from this program possess the knowledge, skills and attitudes necessary to successfully enter into and advance in this occupational area?

   A. Yes; these students definitely possess the skills, knowledge and attitudes necessary for entry and advancement
   B. Yes; these students generally possess the necessary skills, knowledge and attitudes
   C. I do not have an opinion in this matter
   D. No; these students generally do not possess the necessary skills, knowledge and attitudes
   E. No; these students definitely do not possess the necessary skills, knowledge and attitudes

10. If you answered Question #9 with a D or an E, please comment on what skills, knowledge or attitudes are lacking in these students.

11. Would you hire a student who has completed the program for which you are an advisory committee member?

A. Yes; I would definitely hire a student who has completed this program
B. Yes; I would probably hire a student who has completed this program
C. I don't know
D. No; I would probably not hire a student who has completed this program
E. No; I would definitely not hire a student who has completed this program

12. If you answered Question #11 with a D or an E, please comment on why you would not hire a student from the program.

The following is a list of activities with which the advisory committee is likely to be concerned. Would you please indicate the degree to which you believe your advisory committee has been involved in these activities. Circle the appropriate letter.

A = greatly
B = moderately
C = infrequently
D = rarely
E = never

1.	Advice as to general training policies	A B C D E
2.	Advice on qualifications of teachers	A B C D E
3.	Assist in planning the course curriculum	A B C D E
4.	Assist in the placement of students	A B C D E
5.	Advice as to adequacy and appropriateness of facilities and equipment	A B C D E
6.	Assist instructors in relating instruction to the needs of the community	A B C D E
7.	Recommend criteria for evaluation of programs	A B C D E
8.	Assist in the development of a good public relations program	A B C D E

LIKERT

Research Dept.

COURSE SURVEY

Dear Student,

We need your help in our effort to provide the highest quality of education at Kirkwood Community College. We would like to determine through an analysis of the present situation what method of instruction is the best one to employ. That is why we have come to you for information. "Method of instruction" does not refer to what is being taught, but rather to the manner or way in which it is being taught. Please try to be as honest as you can in answering these questions. Your cooperation will be instrumental in aiding us to maximize the quality of instruction at Kirkwood.

Thank you for your help.

DIRECTIONS

1. Please use a SOFT (#2) pencil.
2. Do not write your name on the answer sheet. Instead of your name, write in the boxes provided for name, the name of your program of study. For example, Auto Collision, Medical Assistant, etc.
3. Write, in the indicated place on the answer sheet, the name of your instructor and the name of your class.
4. Begin with Question #1, and remember to move horizontally across the answer sheet.

---

1. With the method of instruction used in this class I am treated as an individual.

   A. True, all of the time
   B. True, most of the time
   C. True, only some of the time
   D. Seldom true
   E. Never true

2. Does the method of instruction used in this class permit students to progress at their own rate?

   A. Yes, definitely
   B. Yes, to some degree
   C. I don't know
   D. No, it tends to keep everyone moving together
   E. No, definitely

3. My ability to learn from the method of instruction used in this class.....

   A. is better than the best class I have ever had
   B. is definitely better than the average class
   C. is about the same as other classes I've had
   D. isn't as good as most classes I've had
   E. is among the worst classes I've had

4. Would you prefer to take this class using a different method of instruction?

   A. Yes, definitely
   B. Yes, I think so
   C. I don't know
   D. No, I don't think so
   E. No, definitely

5. Are you able to understand your textbook, workbook and reference materia

   A. Yes, easily
   B. Yes
   C. Does not apply to this class
   D. No
   E. No, not at all

6. Are you able to understand your learning/lab activities?

   A. Yes, easily
   B. Yes
   C. Does not apply to this class
   D. No
   E. No, not at all

7. Do you study the material for this class outside of your regularly scheduled class time?

   A. Yes, usually more than one hour per day
   B. Yes, usually up to one hour per day
   C. Yes, but only sometimes
   D. No, rarely
   E. No, never. I do all of my work in class.

8. If for some reason you miss this class, will you have work to make up?

   A. Yes, always
   B. Yes, sometimes
   C. I don't know
   D. No, rarely
   E. No, never

9. How interested were you in the occupation for which you are now training when you entered this program?

   A. Very interested it's what I wanted to do for a living
   B. Interested; I thought I would like it more than most things I've tried
   C. Mildly interested; I thought it would be O.K.
   D. Slightly interested; there were othere things I would rather have been learning
   E. Not interested at all

10. Now that you have studied for this occupational area, how interested are you?

   A. Very interested; it's what I want to do for a living
   B. Interested; I think I like it more than most things I've tried
   C. Mildly interested; I think it will be O.K.
   D. Slightly interested; there are other things I would rather be learning
   E. Not interested at all

11. Is the method of instruction used in this class fair to and honest with the students?

   A. Yes, definitely
   B. Yes, most of the time
   C. I don't know
   D. No, not much of the time
   E. No, definitely

12. The following best describes your instructor's availability:

   A. Excellent; he is always available when I need him
   B. Good; he is usually available when I need him
   C. Fair; he is available only some of the times I need him
   D. Poor; he is rarely available when I need him
   E. Very poor; he is never available when I need him

13. Is the material for this class well prepared and organized?

   A. Yes, always
   B. Yes, usually
   C. I don't know
   D. No, seldom
   E. No, never

14. Is the material for this class presented clearly?

   A. Yes, definitely
   B. Yes, for the most part
   C. I don't know
   D. No, the presentations are a little confusing
   E. No, the presentations are very confusing

15. To what degree does your instructor give you personal attention and individual help?

A. He gives all the attention and help I need
B. He gives most of the attention and help I need
C. He gives me some attention and help
D. He rarely gives enough attention and help
E. He never gives any personal attention and help

16. Do you enjoy the method of instruction used in this class?

A. Yes, definitely
B. Yes, generally
C. It's O.K.
D. Not very much
E. No, definitely

17. The facilities and equipment used in this class are:

A. Excellent
B. Good
C. Fair
D. Poor
E. Very poor

18. How important do you feel this particular class was to your eventual career goal?

A. Very important; I feel this class was a necessary part of my education
B. Important; I feel this class will help me in my career
C. I don't know
D. Not very important; I don't think it will prove to be of much value in my career
E. Unimportant; I feel the class was a waste of time and will be of no value to me in my career

19. Do you feel that you have mastered the material contained in this class?

A. Yes, definitely
B. Yes, to some degree
C. I don't know
D. No, not to the degree that I would have liked
E. No, definitely

20. Were the goals and objectives of this course clearly defined at the beginning?

A. Yes, definitely
B. Yes, to some degree
C. I don't know
D. No, the goals and objectives were somewhat unclear from the beginning
E. No, definitely

21. At this point in time do you feel prepared and confident enough to go out in the field and perform the job for which you were trained?

A. Yes, definitely
B. Yes, for the most part
C. I don't know
D. No; I feel that I need more training in this field before I could perform well at a job
E. No; I feel very unprepared and lack the confidence I need to perform at a job in the field

22. Knowing what you know now, if you had a chance to go back in time would you re-enroll in your present program of study?

A. Yes, definitely
B. Probably
C. I don't know
D. Unlikely
E. No, definitely

23. Would you recommend this program of study to a good friend?

A. Yes, definitely
B. Probably
C. I don't know
D. Unlikely
E. No, definitely

24. Knowing what you know now, if you had a chance to go back in time would you re-enroll at Kirkwood?

A. Yes, definitely
B. Probably
C. I don't know
D. Unlikely
E. No, definitely

25. If you answered Question #24 with a D or an E, what changes in Kirkwood would change your answer to an A or B?

26. If and when you must make up work for a class that you have missed, in what manner do you make up the work? (For example, extra class time, written work, etc.)

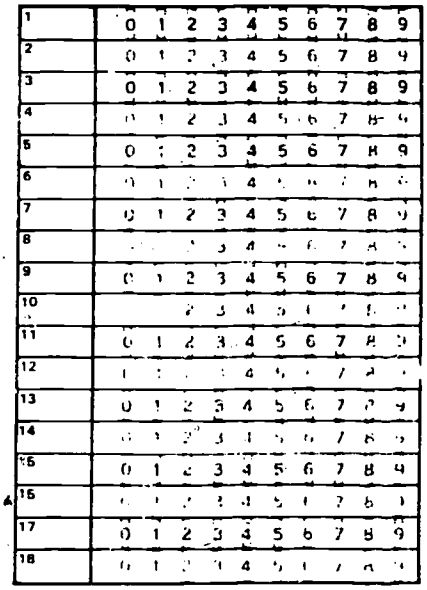
27. List any changes you think would improve the method of instruction used in this class.

28. List the strong points regarding the method of instruction currently used in this class.

OSGOOD

KIRKWOOD COMMUNITY COLLEGE
6301 Kirkwood Blvd. S.W.
Cedar Rapids, Iowa 52406

The purpose of this questionnaire is to measure your general attitudes and feelings. Below are pairs of words; each pair contains two words that have opposite meanings. Between the words are 7 spaces. If you feel strongly that one of the words in the pair represents your feelings, mark the rectangle closest to that word. Mark the rectangle moving towards the center of the page as the word decreases in describing your feelings. If you feel neutral regarding a pair of words, the middle rectangle should be marked.



discouraging	inspiring
beneficial	unhelpful
rigid	flexible
creative	restrictive
enjoyable	unpleasurable
unfair	fair
hard	easy
lively	sluggish
dull	interesting
understandable	confusing
costly	inexpensive
tense	relaxed
organized	chaotic
monotonous	stimulating
rewarding	frustrating
lenient	strict
fast-moving	tedious
irrelevant	relevant
unpleasant	pleasant
simple	difficult

1977-78 VO-TECH ANALYSIS

1 YR. GRADS

CONFIDENTIAL

NAME _____

ADDRESS _____

_____

EMPLOYED AT _____
(Employer's Name)

_____
(Employer's Address)

LENGTH OF TIME AT PRESENT JOB _____

1977 GRADUATE OF KIRKWOOD PROGRAM _____

1. How would you rank your overall technical skill abilities as they aid you in the performance of your present job?

   A. Excellent
   B. Good
   C. Acceptable
   D. Poor
   E. Of no value

2. How would you rank your overall human relation abilities as they aid you in the performance of your present job?

   A. Excellent
   B. Good
   C. Acceptable
   D. Poor
   E. Of no value

3. How well prepared do you feel to handle new problems or situations that arise in the performance of your job?

   A. Very well prepared
   B. Adequately prepared
   C. Somewhat prepared
   D. Inadequately prepared
   E. Very ill-prepared

4. What would you say your chances are of being promoted to the next level in your present area of employment?

   A. Excellent
   B. Good
   C. Not applicable
   D. Fair
   E. Poor

5. What are your chances of receiving a salary increase in recognition of your abilities?

   A. Excellent
   B. Good
   C. Not applicable
   D. Fair
   E. Poor

6. What deficient knowledge, skills and/or attitudes should your schooling at Kirkwood Community College have provided?

7. If you are employed full-time, what is your present yearly salary? Is it between $4,000 and $6,000? If so, choose the appropriate category. If not, go to Item 8.

   A. $4,000 or under
   B. $4,001 to 4,500
   C. $4,501 to 5,000
   D. $5,001 to 5,500
   E. $5,501 to 6,000

8. If you are employed full-time and your salary is between $6,001 and $8,500, please choose the appropriate category. If not, go to Item 9.

   A. $6,001 to 6,500
   B. $6,501 to 7,000
   C. $7,001 to 7,500
   D. $7,501 to 8,000
   E. $8,001 to 8,500

9. If you are employed full-time and your salary is between $8,501 to $11,000, please choose the appropriate category. If not, go to Item 10.

   A. $8,501 to 9,000
   B. $9,001 to 9,500
   C. $9,501 to 10,000
   D. $10,001 to 10,500
   E. $10,501 to 11,000

10. If you are employed full-time and your salary is between $11,001 to $13,500, please choose the appropriate category. If not, go to Item 11.

A. $11,001 to 11,500
B. $11,501 to 12,000
C. $12,001 to 12,500
D. $12,501 to 13,000
E. $13,001 to 13,500

11. If you are employed full-time and your salary is between $13,501 to $15,501 and over, please choose the appropriate category.

A. $13,501 to 14,000
B. $14,001 to 14,500
C. $14,501 to 15,000
D. $15,001 to 15,500
E. $15,501 and up

12. If you are employed part-time, what is your present hourly rate?

A. $2.65 or under
B. $2.65 to 3.00
C. $3.01 to 3.50
D. $3.51 to 4.00
E. $4.00 and over

13. If you are employed part-time, on the average how many hours a week do you work?

A. 10 or less
B. 10 - 20
C. 20 - 30
D. 30 - 40
E. 40 or more

1977-78 VO-TECH ANALYSIS

EMPLOYER SURVEY

CONFIDENTIAL

EMPLOYEE'S NAME _____

1. How would you rank this employee's overall technical skill abilities as they aid him/her in the performance of his/her job?

   A. Excellent
   B. Good
   C. Acceptable
   D. Poor
   E. Of no value

2. How would you rank this employee's human relations abilities as they aid him/her in the performance of his/her job?

   A. Excellent
   B. Good
   C. Acceptable
   D. Poor
   E. Of no value

3. How well prepared do you feel this employee is to handle new problems or situations that arise in the performance of his/her job?

   A. Very well prepared
   B. Adequately prepared
   C. Somewhat prepared
   D. Inadequately prepared
   E. Very ill-prepared

4. What would you say his/her chances are of being promoted to the next level in his/her present area of employment?

   A. Excellent
   B. Good
   C. Not applicable
   D. Fair
   E. Poor

5. What are his/her chances of receiving a salary increase in recognition of his/her abilities?

   A. Excellent
   B. Good
   C. Not applicable
   D. Fair
   E. Poor

6. If he/she is employed full-time, is his/her yearly salary between $4,000 and $6,000? If so, choose the appropriate category. If not, go to Item 7.

   A. $4,000 or under
   B. $4,001 to $4,500
   C. $4,501 to $5,000
   D. $5,001 to $5,500
   E. $5,501 to $6,000

7. If he/she is employed full-time and his/her salary is between $6,000 and $8,500 please choose the appropriate category. If not, go to Item 8.

   A. $6,001 to $6,500
   B. $6,501 to $7,000
   C. $7,001 to $7,500
   D. $7,501 to $8,000
   E. $8,001 to $8,500

8. If he/she is employed full-time and his/her salary is between $8,501 and $11,000, please choose the appropriate category. If not, go to Item 9.

   A. $8,501 to $9,000
   B. $9,001 to $9,500
   C. $9,501 to $10,000
   D. $10,001 to $10,500
   E. $10,501 to $11,000

9. If he/she is employed full-time and his/her salary is between $11,001 to $13,500, please choose the appropriate category. If not, go to Item 10.

   A. $11,001 to $11,500
   B. $11,501 to $12,000
   C. $12,001 to $12,500
   D. $12,501 to $13,000
   E. $13,001 to $13,500

10. If he/she is employed full-time and his/her salary is between $13,501 to $15,501 and over, please choose the appropriate category.

    A. $13,501 to $14,000
    B. $14,001 to $14,500
    C. $14,501 to $15,000
    D. $15,501 and up

11. If he/she is employed part-time, what is his/her presently hourly rate?

    A. $2.65 or under
    B. $2.66 to $3.00
    C. $3.01 to $3.50
    D. $3.51 to $4.00
    E. $4.01 and over

12. If he/she is employed part-time, on the average how many hours does he/she work?

    A. 10 or less
    B. 10 - 20
    C. 20 - 30
    D. 30 - 40
    E. 40 or more

///

13. What deficient knowledge, skills and/or attitudes of this employee should his/her schooling at Kirkwood Community College have provided?

1977-78 VO-TECH ANALYSIS

5 YR. GRADS

NAME OF VOCATIONAL PROGRAM FOR 1972-73 _____

EMPLOYED AT _____
(Name of Employer)

_____
(Address)

1. Have you sought employment in the occupational area for which you were trained?

____ Yes
____ No

1a. If "No", please indicate reason(s):

____ a. Sought employment in another occupational area
____ b. Entered another school
____ c. I am a housewife (or house-husband)
____ d. Physical or other handicap
____ e. I am not interested in a job
____ f. I entered the military service
____ g. I only wanted to work part-time
____ h. Other (please specify) _____

2. Since you left the program, have you enrolled in any additional educational programs?

____ Yes
____ No

2a. If "Yes", check purpose of the program:

____ a. Program for personal growth and satisfaction
____ b. Program to assist you on your job
____ c. Program to prepare you for another occupation
____ d. College degree program

3. What is your current employment status?

____ a. Employed full-time
____ b. Employed part-time
____ c. Unemployed, but looking for work
____ d. Unemployed, and not looking for work
____ e. In the military service
____ f. Full-time student

4. If you are employed full-time, what is your present (or most recent) salary range?

4,000 or under____	7,501 to 8,000 ____	11,501 to 12,000____
4,001 to 4,500____	8,001 to 8,500 ____	12,001 to 12,500____
4,501 to 5,000____	8,501 to 9,000 ____	12,501 to 13,000____
5,001 to 5,500____	9,001 to 9,500 ____	13,001 to 13,500____
5,501 to 6,000____	9,501 to 10,000 ____	13,501 to 14,000____
6,001 to 6,500____	10,001 to 10,500 ____	14,001 to 14,500____
6,501 to 7,000____	10,501 to 11,000 ____	14,501 to 15,000____
7,001 to 7,500____	11,001 to 11,500 ____	15,001 to 15,500____
		15,501 and up ____

5a. If you are employed part-time, what is your hourly rate? $_____

5b. On the average, how many hours per week do you work? _____

6. How satisfactory was this vocational training as it aids you in the performance of your job?

____ a. Very satisfactory
____ b. Satisfactory
____ c. My vocational training does not apply to my present job
____ d. Unsatisfactory
____ e. Very unsatisfactory

7. How important was this educational experience in obtaining your present full-time job?

____ a. The training was a requirement for the job
____ b. The training was a factor in my employer's selection of me for the job
____ c. The training has no relationship to this type of work
____ d. The training was of little value in obtaining my present job
____ e. The training was of no value in obtaining my present job

VIDEOTAPE EVALUATION

This evaluation instrument is designed to improve the quality of instruction. Familiarize yourself with the questions and possible responses by reading this form in its entirety before viewing and evaluating the videotape.

Videotape # _____ Title _____

Rate the following questions as they apply to YOU. Please circle the most appropriate response, with 5 being the highest rating down to 1 being the lowest rating. If a question does not apply to the videotape you are evaluating--circle NA for Not Applicable.

	excellent--------poor					
1. Was the T.V. picture clear?	5	4	3	2	1	NA
	excellent--------poor					
2. Was the sound pleasant, clear and understandable? ..	5	4	3	2	1	NA
	excellent--------poor					
3. Was the speed of the voice easy to follow at all times?	5	4	3	2	1	NA
	excellent--------poor					
4. Did the length of the videotape adequately cover the material--neither too long nor too short?	5	4	3	2	1	NA
	excellent--------poor					
5. Were you able to adequately see everything which the videotape tried to show?	5	4	3	2	1	NA
	clear--------unclear					
6. Were the learning outcomes or objectives of the videotape clear to you?	5	4	3	2	1	NA
	covered--not covered					
7. Did the videotape adequately and completely cover its stated objectives or learning outcomes?	5	4	3	2	1	NA
	helpful--not helpful					
8. Were the materials or worksheets to go with the videotape meaningful and helpful?	5	4	3	2	1	NA
	relate----not relate					
9. Did the videotape relate to the course objectives or learning outcomes? ..	5	4	3	2	1	NA

10. Were you able to view the videotape whenever you needed to? yes no

11. If you have or are going to view this videotape more than once, why?

_____

_____

12. What do you like about learning from videotape assisted instruction?

_____

_____

13. What do you dislike about learning from videotape assisted instruction?

_____

_____

14. Any additional comments:

_____

_____

THANK YOU FOR YOUR EVALUATION.

KIRKWOOD COMMUNITY COLLEGE

SPOT

IDENTIFICATION NO.

This form was designed to provide feedback to the instructor and/or staff on selected aspects of instruction or program outcome. Your response should reflect your individual perceptions. Below are a series of statements which may or may not be consistent with your experience of this course, program or instructor. Consider each item separately. First decide whether you generally agree or disagree with the statement; then indicate the strength of agreement or disagreement by marking the appropriate space. Please use a pencil.

NAME: IDENT:
DATE:

NOTE: RESPONSE POSITIONS ARE ARRANGED FROM STRONGLY TO SLIGHTLY FOR BOTH AGREE AND DISAGREE ==========>>

	AGREE			DISAGREE		
	STRONGLY	MODERATELY	SLIGHTLY	STRONGLY	MODERATELY	SLIGHTLY
Course difficulty was appropriate for my background						
Course organization assisted me in learning						
I learned basic terms in this area						
I was encouraged to apply knowledge and skills in new situations						
Course objectives helped me understand main emphases						
I was encouraged to learn on my own						
The course required an appropriate amount of work for the credit earned						
Course objectives helped me organize my studying						
The pace of the course met my needs						
Course content clarified techniques I was expected to develop						
Grades were based on a fair balance of requirements and content						
Exams reflected the emphases of class presentations						
Exams covered material on which I expected to be tested						
Assignments contributed to my learning						
Discussion was helpful to my learning						
The textbook was helpful for my understanding of this course						
Visual aids (overhead/slides/blackboard, etc.) contributed to my learning						
Help was available to me outside of class if I had questions						
My knowledge and skills were increased						
I learned new ways to evaluate problems						

1. 1 2 3 4 5 6 2. 1 2 3 4 5 6 3. 1 2 3 4 5 6

4. 1 2 3 4 5 6 5. 1 2 3 4 5 6 6. 1 2 3 4 5 6

	AGREE			DISAGREE		
	STRONGLY	MODERATELY	SLIGHTLY	STRONGLY	MODERATELY	SLIGHTLY

Program _____

Related Occupations _____

Evaluator _____

APPENDIX H

Mathematical Operation	Designate at what point in the program the student should develop the skill (at entry, during the 1st quarter, 2nd quarter, etc.).	Give an example of each skill as it applies to your program. Attach an extra sheet if necessary.
1. Ability to add, subtract, multiply, and divide whole numbers		
2. Skill in reading and writing decimals		
3. Ability to add, subtract, multiply, and divide decimals		
4. Skill in rounding off decimals and whole numbers		
5. Ability to add, subtract, multiply, and divide fractions		
6. Skill in reducing fractions to lowest terms, changing fractions to equivalent fractions, and comparing fractions		
7. Skill in finding percent of a number and what percent one number is of another		

8. Skill in changing percents to common fractions and changing fractions to percent	
9. An understanding of sets, and the properties of sets	
10. Addition, subtraction, multiplication, and division of negative numbers	
11. Ability to change fractions to decimals and decimals to fractions	
12. Utilization of monetary mathematics	
13. Ability to compute interest	
14. Ability to apply mathematics to time	
15. Ability to use ratios and proportions	
16. Ability to read and draw graphs and charts	
17. Ability to use formulas	
18. Knowledge of Pythagorean theorem	

19. An understanding of exponential notation	
20. Skill in finding square roots or cube roots	
21. Ability to use trigonometric functions- sine, cosine, tangent etc.	
22. Knowledge of the Metric System including weights, volume, and length	
23. Knowledge of English System including weights, volume, and length	
24. Ability to change from the English System to the Metric System and vice versa	
25. Ability to measure length, volume, or weight	
26. Ability to compute volumes	
27. Ability to compute area	
28. A knowledge of logarithms and their use	
29. Ability to use algebraic equations with one variable	

30. Ability to use algebraic equations with two or more variables	
31. Ability to translate a word problem into an algebraic expression	
32. An understanding of different base systems	
33. Ability to translate Roman numerals into Arabic numerals and vice versa	
34. Skill in using the slide rule	
35. Skill in using calculators	
36. Ability to compute averages	
37. An understanding of statistical terminology- correlation, T-scores, etc.	
38. An understanding of various types of statistical distributions	

EVALUATION OF STUDENT ATTITUDE

The Osgood attitude survey was administered to Personal Achievement Reading students during six quarters of the 1976-78 school years. An explanation of the instrument and the collected data follows.

Instrument

The Osgood attitude survey is made up of pairs of opposite words with seven blank spaces between each pair. Students are asked to check the space that reflects the strength of their attitude about reading in relation to the given pair of words. The student reads (or has read to her/him) the following directions:

> Dear Student,
>
> The purpose of this questionnaire is to measure your general attitudes and feelings toward reading. On the following page are twenty-one (21) pairs of words; each pair contains two words that have opposite meanings. Between the words of each pair are seven (7) spaces. If you feel strongly that one of the words in the pair describes reading, place an "x" in the space closest to that word. If you feel that one word in the pair describes reading somewhat, but not strongly, place an "x" in the second or third space from the word. If you feel neutral regarding a pair of words, or if you feel they do not apply to reading at all, the "x" should be placed in the middle space.
>
> Please work at a fairly high rate of speed through this questionnaire. Do not worry or puzzle over individual items and do not try to remember how you checked previous items. Remember, it is your first, but honest impression that is important.
>
> Thank you for your cooperation.

A copy of the survey has been included.

APPENDIX I

READING

discouraging	_____:_____:_____:_____:_____:_____:_____	inspiring
beneficial	_____:_____:_____:_____:_____:_____:_____	unhelpful
enjoyable	_____:_____:_____:_____:_____:_____:_____	unpleasurable
unfair	_____:_____:_____:_____:_____:_____:_____	fair
hard	_____:_____:_____:_____:_____:_____:_____	easy
lively	_____:_____:_____:_____:_____:_____:_____	sluggish
dull	_____:_____:_____:_____:_____:_____:_____	interesting
understandable	_____:_____:_____:_____:_____:_____:_____	confusing
tense	_____:_____:_____:_____:_____:_____:_____	relaxed
organized	_____:_____:_____:_____:_____:_____:_____	chaotic
monotonous	_____:_____:_____:_____:_____:_____:_____	stimulating
rewarding	_____:_____:_____:_____:_____:_____:_____	frustrating
fast-moving	_____:_____:_____:_____:_____:_____:_____	tedious
irrelevant	_____:_____:_____:_____:_____:_____:_____	relevant
unpleasant	_____:_____:_____:_____:_____:_____:_____	pleasant
simple	_____:_____:_____:_____:_____:_____:_____	difficult
boring	_____:_____:_____:_____:_____:_____:_____	challenging
good	_____:_____:_____:_____:_____:_____:_____	bad
unfulfilling	_____:_____:_____:_____:_____:_____:_____	self-satisfying
unnecessary	_____:_____:_____:_____:_____:_____:_____	necessary
worthwhile	_____:_____:_____:_____:_____:_____:_____	valueless

The 21 pairs of words assess five concepts: 1) the value of reading, 2) the satisfaction derived from reading, 3) the pleasurability of reading, 4) the interest in what is read, and 5) the difficulty of the reading task.

Administration

This survey is administered upon entry to Personal Achievement reading and again upon exit from the program to assess change in attitude. (A student taking one quarter of P.A. reading would be given the assessment at the beginning and end of the quarter. If a student takes three quarters of P.A. reading she/he would be given the Osgood at the beginning of the first quarter and at the end of the third.)

Population

Ninety-eight students who were given the Osgood survey completed and exited from P.A. reading during the six quarters. At entrance to and exit from the program, these students were given the Osgood attitude inventory. The only control was that all students were enrolled in P.A. reading.

Method of Tabulation

For each respondent the average response was tabulated for each concept assessed. (Responses were numbered from 1-7 with 7 being the most positive response.) The total of these individual averages was itself averaged to produce the pre and post figures stated later in this report. On the following pages are the specific pairs of words that assess each concept, the average pre and post responses and the degree to which the pre and post responses differ.

Concept #1 - Value of reading

beneficial - unhelpful

irrelevant - relevant

unnecessary - necessary

worthwhile - valueless

Concept #2 - Satisfaction derived from reading

discouraging - inspiring

rewarding - frustrating

unfulfilling - self-satisfying

Concept #3 - Pleasurability of reading

enjoyable - unpleasurable

fair - unfair

unpleasant - pleasant

good - bad

Concept #4 - Interest in what's read

lively - sluggish

dull - interesting

tense - relaxed

monotonous - stimulating

fast-moving - tedious

boring - challenging

Concept #5 - Difficulty of Reading

hard - easy

understandable - confusing

organized - chaotic

simple - difficult

	Winter 76-77		Spring 77		Summer 77		Fall 77		Winter 77-78		Spring 78	
	pre/post	dif.	pre/post	dif.	pre/post	dif.	pre/post	dif.	pre/post	dif.	pre/post	dif.
Value of Reading	5.1/5.6	+ .2	5.8/6.7	+.9	6.1/6.3	+ .2	4.1/5.7	+1.7	5.9/6.2	+ .3	6.3/6.4	+.1
Satisfaction from Reading	4.9/5.7	+ .8	5.6/6.4	+.8	5.4/6.3	+ .9	4.4/5.5	+1.1	5.2/5.3	+ .1	5.3/5.9	+.6
Pleasurability of Reading	4.8/5.9	+1.1	5.7/6.4	+.7	5.4/6.1	+ .7	4.7/5.7	+1.1	5.3/6.7	+1.4	5.7/6.1	+.1
Interest In What's Read	3.4/5.1	+1.7	5.2/5.9	+.7	5.0/5.6	+ .6	4.2/4.8	+ .6	4.5/5.2	+ .7	5.3/5.5	+.2
Difficulty	3.7/4.9	+1.2	4.4/5.3	+.9	4.1/5.3	+1.2	3.9/4.7	+ .8	3.9/5.1	+1.2	4.2/4.7	+.5

Total Averages

Value of Reading	5.5/6.2	+ .6
Satisfaction of Reading	5.1/5.5	+ .4
Pleasurability of Reading	5.3/6.1	+ .8
Interest In What's Read	4.6/5.3	+ .7
Difficulty of Reading	4.0/5.0	+1.0

CBE DEVELOPMENT CHECKLIST

PROGRAM _____

DEPT. HEAD _____

COMPLETED	PROJECTED COMPLETION DATE	MAJOR STEPS TO COMPLETE
☐ _____ Date	_____ Date	Develop Job Descriptions
☐ _____ Date	_____ Date	Identify Program Competencies
☐ _____ Date	_____ Date	Determine What Competencies Are Emphasized In Which Courses
☐ _____ Date	_____ Date	List Course Level Terminal Performance Outcomes (TPO'S)
☐ _____ Date	_____ Date	Develop Unit "Spec" Sheets For Attaining TPO'S
☐ _____ Date	_____ Date	Develop, Adapt, Or Adopt Grading And Recording Format(s)
☐ _____ Date	_____ Date	Develop Unit/Course Content And Materials
☐ _____ Date	_____ Date	All Parties Affected By The New Curriculum Reach Reasonable Consensus On Its Operation
☐ _____ Date	_____ Date	Approval To Begin Program Given*

*May not apply to all programs

CBE DEVELOPMENT CHECKLIST (page 2)

PROGRAM _____

DEPT. HEAD _____

COMPLETED	PROJECTED COMPLETION DATE	MAJOR STEPS TO COMPLETE
☐ Date	Date	Implementation Of CBE Curriculum Begun
☐ Date	Date	Program Analysis Conducted
☐ Date	Date	Report Documenting Results Of Program Analysis Written
☐ Date	Date	Program Revised Where Indicated By Program Analysis Report

MATH
SELF RATING

Likes and Dislikes

	YES	NO
I enjoy playing number games	____	____
I like putting puzzles together	____	____
I enjoy working with figures	____	____
I enjoy mechanical drawing	____	____
I look forward to enrolling in college math courses	____	____
I like to measure exactly before hanging a picture	____	____
I like to figure out math problems	____	____

TOTAL ____

SELF RATING

Abilities

I am generally a good math student	____	____
I took two full years of high school algebra	____	____
I understand geometric theorems	____	____
I routinely balance my checkbook	____	____
I usually get the correct answer on a math problem the first time	____	____
I remember telephone numbers well	____	____
I make a budget for my spending money	____	____
I do arithmetic (add, subtract, multiply, divide, etc.) well	____	____

TOTAL ____

SELF RATING

High School Or GED	YES	NO
I made a B or better in the courses listed below	____	____
1. Algebra I	____	____
2. Algebra II	____	____
3. Geometry	____	____
4. General Math	____	____
5. Other Math course	____	____
Multiply Total Yeses x 2	____	____

OR

I scored 46 or higher on GED Math Test	____	____
Multiply Yes x 3	____	____

TOTAL ☐

GRAND TOTAL ☐

SELF ASSESSMENT & COURSE SELECTION

Kirkwood Community College

READING

SELF RATING

Likes and Dislikes

	YES	NO
I like to read short stories/novels	____	____
I would rather read the news than watch it on TV	____	____
I enjoy visiting the library	____	____
I prefer written directions to oral ones	____	____
When I read magazines (such as Sports Illustrated, Time, Ebony, Ladies Home Journal), I actually read one or more complete articles, rather than scanning and reading picture captions	____	____
I would enjoy working on the school annual or newspaper	____	____
I would like to work in a library	____	____
I prefer reading descriptions of people to looking at pictures of people	____	____

TOTAL ____

SELF RATING

Abilities

	YES	NO
I remember what I read	____	____
I can talk about what I read	____	____
I am a fast reader	____	____
I usually understand what I read the first time I read it	____	____

	YES	NO
I did well in high school courses requiring reading (like literature, history)	____	____
I have read at least three complete books during the last year	____	____
I usually don't have to read directions twice to fully understand them	____	____
I read some articles in the newspaper almost every day	____	____

TOTAL [ ]

SELF RATING

High School Or GED

I made a B or better in the courses listed below.

	YES	NO
1. Freshman English (9th grade)	____	____
2. Sophomore English (10th grade)	____	____
3. Literature	____	____
4. Government	____	____
5. Advanced Placement English or College Prep.	____	____
Multiply Total yeses x 2	____	____

----------OR----------

I scored 46 or higher on the GED Literature test.	____	____
Multiply yes x 3	____	____

TOTAL [ ] GRAND TOTAL [ ]

WRITING

SELF RATING

Likes and Dislikes

	YES	NO
I like to work crossword puzzles	____	____
I have written a play or short story, or poetry, or letters because I enjoyed it	____	____
I would like to be a part of a creative writing club	____	____
I enjoy group discussions, buzz sessions, and/or brainstorming	____	____
It is easy for me to see mistakes in the writing and speech of others	____	____
I enjoy writing creatively	____	____
I can follow the plot of a novel or drama without difficulty	____	____
I enjoy symbolism, characterization, and motives in literature	____	____

TOTAL [ ]

SELF RATING

Abilities

	YES	NO
I can recognize parts of speech (verbs, prepositions, adjectives, etc.)	____	____
I can organize a paragraph and I understand such things as proper beginning and ending of paragraphs, key and supporting sentences, transitions, etc.	____	____
I recognize the parts of a sentence (phrases, clauses, subject, predicate, etc.)	____	____
I am able to follow directions better when I hear them than when I read them.	____	____

	YES	NO
I have written for the school newspaper	____	____
I have written poetry or short stories or a biography	____	____
I am able to use reference material effectively	____	____

TOTAL ____

SELF RATING

High Or GED

I made a B or better in the courses listed below.

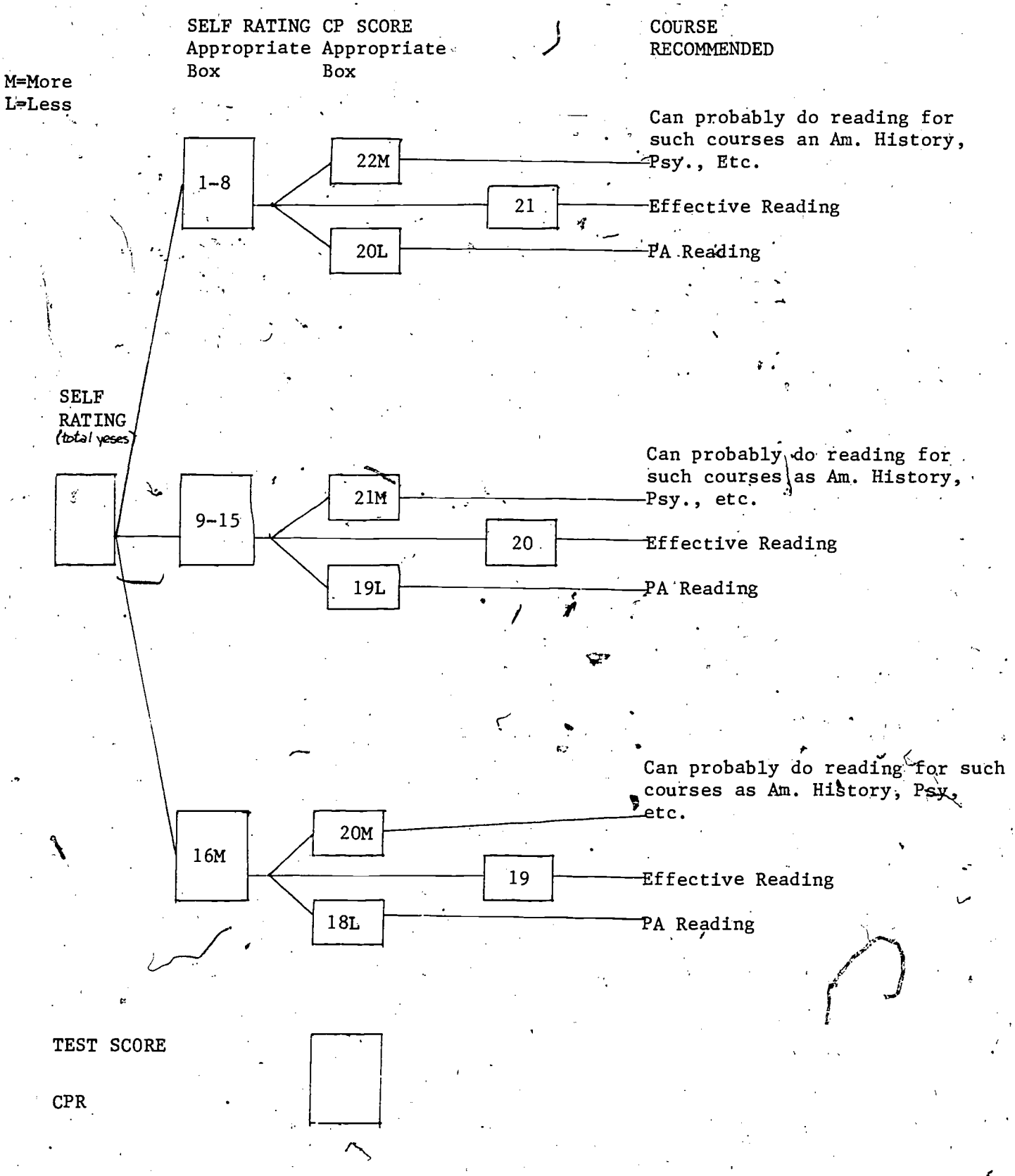
1. Creative Writing	____	____
2. Writing Elective	____	____
3. Business English	____	____
4. Journalism	____	____
5. Advanced Placement English	____	____
Multiply Total yeses x 2	____	____

OR

I scored 46 or higher on the GED English Test	____	____
Multiply Yes by 3	____	____

TOTAL ____ Grand Total ____

PERSONAL ASSESSMENT SUMMARY (READING)

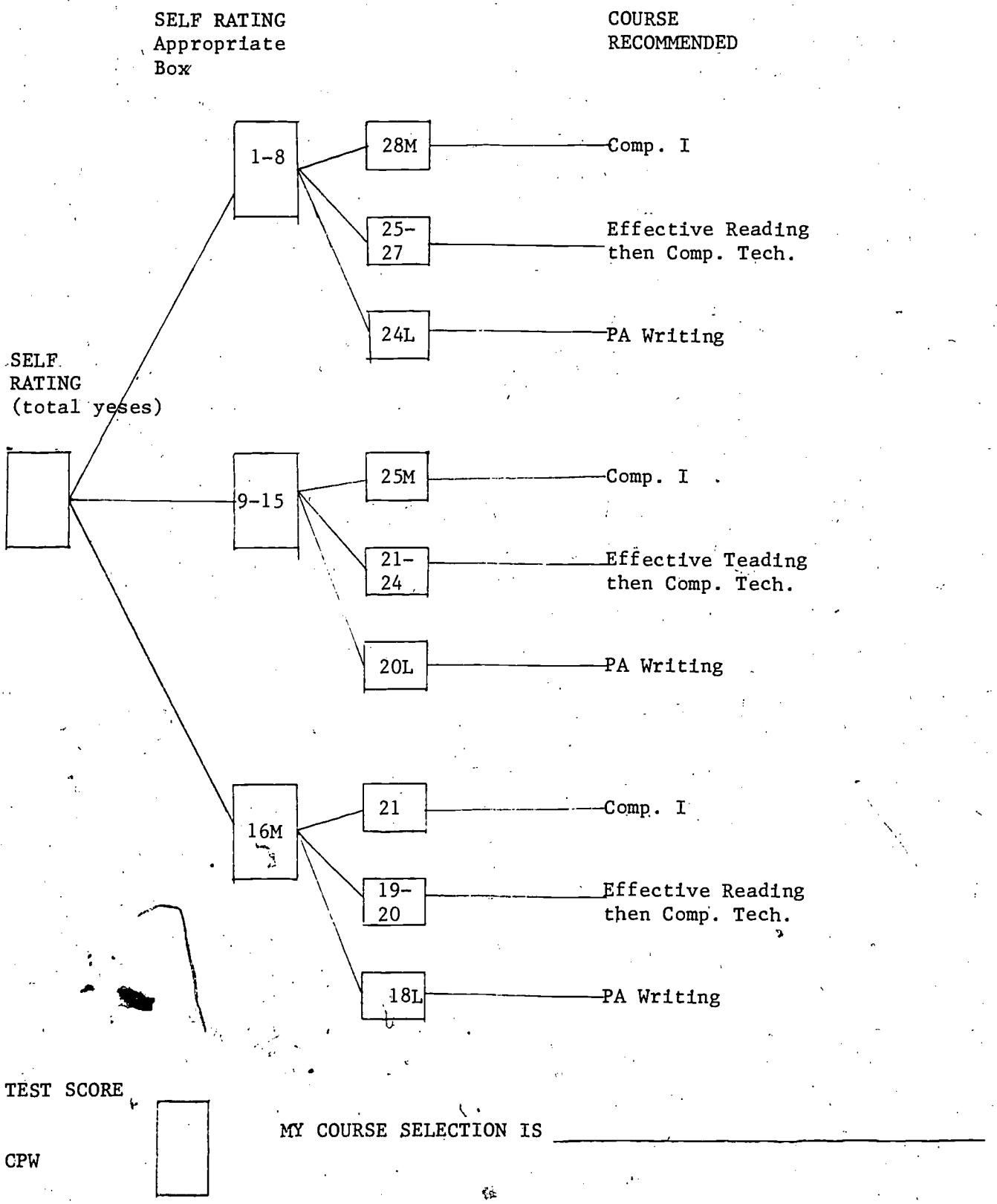


TEST SCORE

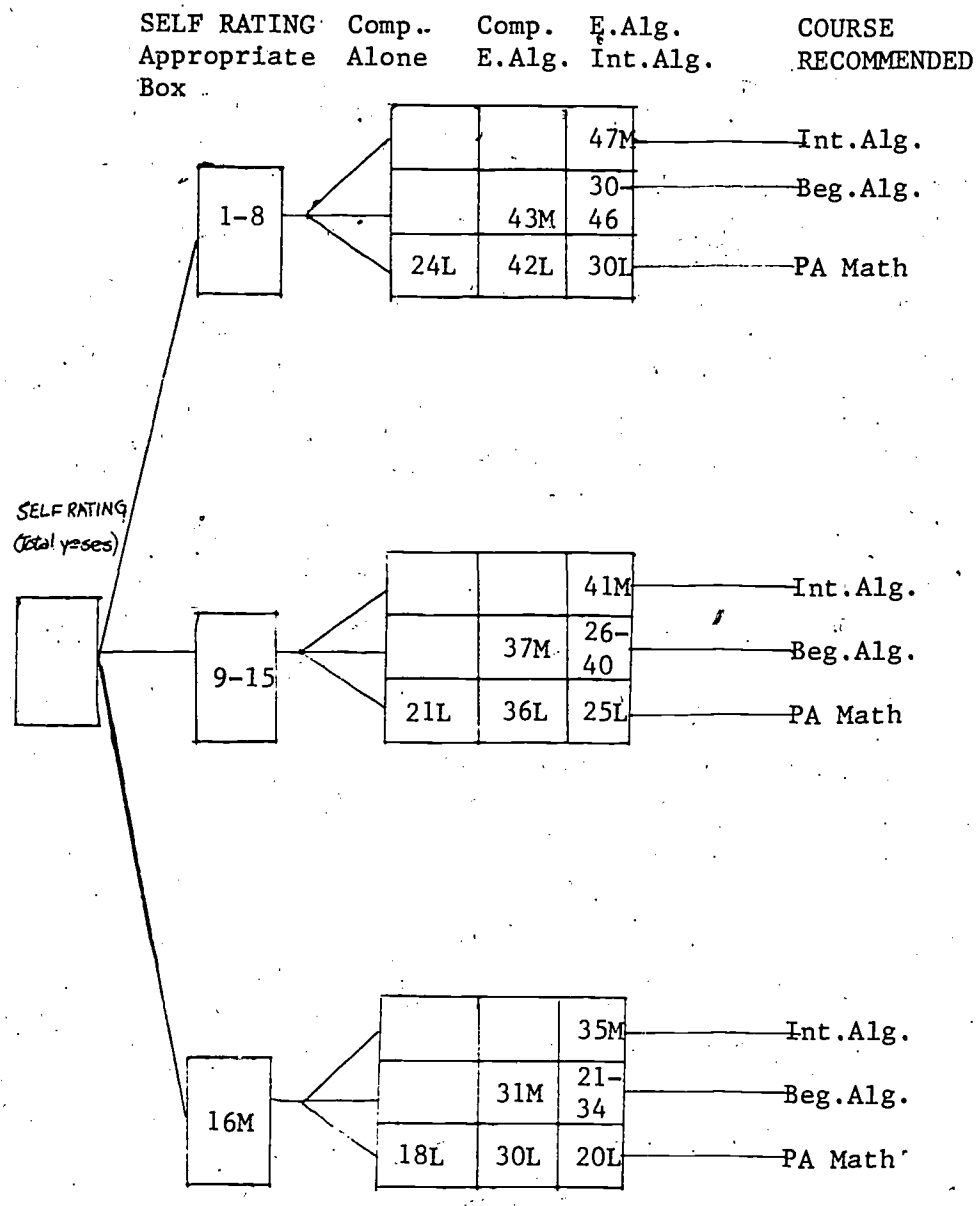
CPR

MY COURSE SELECTION IS _____

PERSONAL ASSESSMENT SUMMARY (WRITING)



PERSONAL ASSESSMENT SUMMARY (MATH)



TEST SCORE

CPM

MY COURSE SELECTION IS _____

MATERIALS FOR

Reading & Math

IN THE
CONTENT AREAS

PERSONAL ACHIEVEMENT DEPARTMENT
KIRKWOOD COMMUNITY COLLEGE
IN COOPERATION WITH FIPSE GRANT

Purpose of Materials

The purpose of the Personal Achievement materials is to provide basic math and reading instruction for adults that relates to vocational areas of study. By speaking to adult interests, these materials should both show the relevency of math and reading skills to specific vocational areas and provide an increased motivational factor for the learner.

Explanation of Format

Math:

There are 7 math booklets, one each in the areas of agriculture, health occupations, environmental occupations, automotive, data processing, office education and percents. Each booklet is divided into the basic skill areas required for that field. Most booklets cover operations on whole, fractions and decimals, ratio and proportion, percent and then any special skills which are needed. Each skill area contains 5 - 10 word problems dealing with the skill involved. The problems are area content related.

Reading:

The reading materials come in the form of booklets. Each booklet deals with various aspects of a specific reading skill, and is divided into a number of individual objectives. Each booklet also comes with a pre/post test to assess knowledge the student may already have, and to measure a mastery of each objective in the booklet. Answer keys to the booklets are of agriculture, auto repair, business, data processing, environmental studies, and health occupations.

Summary of Packet Contents

Reading:

Learning Word Parts

The Learning Word Parts packets deal with identifying roots, prefixes, suffixes, compound words, and determining whether a word is a noun, adverb, or adjective by looking at common word endings.

Finding Exact Meanings

Packets provide instruction in the use of dictionaries and glossaries. They include locating the appropriate section in a dictionary where a word will be found, alphabetization, use of dictionary guide words, identifying parts of a dictionary entry, use of a pronunciation key, choosing the correct meaning of a word, and identifying sources other than the dictionary to find the exact meaning of words.

Clues to Word Meaning

Packets deal with the skill of using the context to identify word meanings. Different types of contextual clues and referent pronouns are discussed.

Mastering Technical Vocabulary

Packets contain various study technique suggestions for acquiring and retaining technical vocabulary.

Reading A Manual and Following Directions

(This packet only available in the area of Agriculture.) Packet deals with thorough reading, reading diagrams, defining directional and technical terms, noting sequence, identifying cautions in manuals, and identifying different manual parts.

Inference

(This packet only available in the area of Data Processing.) Packet deals with referent pronouns, literal statements, implied information, and negatively constructed inferences.

Math:

The problems in the math booklets are practices of the various mathematical concepts. They are content-oriented to help show the practicality of each concept. They are not meant to provide initial instruction in computational skills. Hopefully these applied problems will be a motivator for the student.

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